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JPRS Report

Environmental Issues

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Environmental Issues

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REGIONAL AFFAIRS

Roundup of Environmental Reports for 27 July-8 August

AB1008150494

[Editorial Report] The following is a roundup of environmental reports monitored from media in FBIS Abidjan Bureau and EAU coverage areas from 27 July to 8 August.

Cote d'Ivoire

Abidjan FRATERNITE MATIN in French on 4 August on page 2 reports that, as part of energy saving and environmental protection measures, the Ivorian Petroleum Company launched an oil recycling project two years ago. Nearly 8,000 tonnes of used oil is discarded in the country, on average.

Ghana

According to Accra Ghana Broadcasting Corporation Radio Network in English at 0600 GMT on 8 August, a study conducted by the environmental group, Friends of the Earth, Ghana, indicates that Ghana's forest will be completely depleted even before the year 2000 unless a moratorium is placed on further extraction of round logs subject to the efficient handling of accumulated stock. The group has therefore appealed to the government to take measures to halt the serious ecological damage to the country's environment due to the wasteful log extraction.

Accra Ghana Broadcasting Corporation Radio Network in English at 1800 GMT on 6 August reports some African countries have indicated their intention to send delegations to understudy Ghana's environmental policy and action plan. This was disclosed by Dr. P. C. Akwah, executive director of the Environmental Protection Council at the scientific session of the second annual general meeting of the Ghana Public Health Association in Accra. The proposed visit to Ghana to understudy the plan followed recommendations from international environment-related agencies. Dr. Akwah said officials from Kenya have already held discussions with the Environmental Protection Council in Accra on the details of the plan. He explained that environmental protection in Ghana is guided by the preventive approach which seeks to ensure reconciliation between economic development and natural resource allocation.

Nigeria

Lagos NTA Television Network in English at 2000 GMT on 31 July reports that the Yobe State administrator has urged the Federal Government to declare the state an ecological disaster area. He disclosed that about three-quarters of the state had either already been encroached upon or faced encroachment by the desert and sand dunes from the Sudan and the Sahel savannah.

Lagos Radio Nigeria Network in English at 1500 GMT on 27 July reports the establishment of an Environmental

Protection Agency in Delta State. The agency's duties include formulating strategies to curb ecological degradation.

Lagos NTA Television Network in English at 2000 GMT on 8 August reports that the Federal Environmental Protection Agency, FEPA, has been in Jigawa State to assess the extent of damage done to the ecology of the state. The visit, led by FEPA's Director General Dr. Evans Ayina, is with a view to rendering assistance. The administrator of the state, Colonel Ibrahim Aliyu, had appealed to FEPA on the strength of recent ecological disasters which saw havoc being caused by wind and gully erosion, drought, and desertification. Col. Aliyu further told Dr. Ayina that following this year's raining season, pests have reappeared and are likely to cause serious damage to food crops. After touring the disaster area, Dr. Ayina explained that an all-embracing convention is being put in place by the United Nations in an effort to combat desert encroachment. He also said that FEPA will open a liaison office in the state soon.

Egypt 'Willing' To Cooperate on Lake Victoria Projects

EA2508105594 Nairobi KTN Television Network in English 1800 GMT 24 Aug 94

[Text] Egypt is willing to enter into joint projects with countries utilizing the waters of Lake Victoria to supplement efforts being made to contain drought in the various countries served by the lake. The Egyptian ambassador to Kenya, Mr. Marwan Badr, said this project would also be geared towards increasing the amount of water in the lake which faces pollution as a result of ecological changes within the region.

The nearly 50-year-old treaty giving Egypt immense control over the use of Lake Victoria and Nile waters for irrigation, need to be changed now. Countries of Uganda, Tanzania and Kenya—custodians of the lake—should also benefit from its waters for irrigation and other development projects. Millions of east Africans living in the lake basin have struggled with rain-fed agriculture at a time when irrigation technology would have made them double their agricultural production. The Egyptian ambassador to Kenya, Marwan Badr, says his country has no guarantee with the other countries benefiting from the lake waters. [Begin Badr recording]

Ambassador Badr: According to our studies, there is enough water for all of us provided that we can join hands and implement certain projects that would ensure enough water for our use. And on this occasion, I would like to emphasize and reiterate that Egypt is in no way opposed to the idea that the upstream countries like Kenya, Uganda, and Tanzania use their water for development. As I said, we are even ready to help them in developing their water resources. All that we are asking for is the continued exchange of information and cooperation so that we can ensure that there is enough water for all of us in future. [end recording]

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BURUNDI**Lake, River Fish Deaths Linked to Insecticides***EA1808194394 Bujumbura Radio-Television Nationale du Burundi Radio in French 1800 GMT 17 Aug 94*

[Excerpts] Since yesterday, people have been warned against eating fish found dead in Lake Tanganyika and the Ruzizi River. We have just heard that investigations have been conducted to establish the actual cause of the problem. Mr. Gaspard Ikoyu, director general of the Water and Power Distribution Administration [UNPN] has been interviewed by our colleague, Jean Berckmans Ntahimana: [Begin Ikoyu recording]

Ikoyu: We have just conducted tests of Ruzizi and Tanganyika waters, noting no indication of pollution. Second, we sent a Regideso [UNPN team] north to the Rwanda-Burundi border at [word indistinct], it returned with a number of items of information. On the Rwandan side of the Ruzizi, people have been using a substance to kill fish. Of late, however, they stole a large quantity of the substance, which is mostly used to protect rice and other plants. A large quantity of the substance was poured into the river, causing the deaths of large numbers of fish. [passage omitted] However, we have noted that only river fish have died, no problem affects the lake fish, as indicated by the analysis we have conducted. [passage omitted] [end recording]

MOZAMBIQUE**Government Drafts Program on Environment***MB2408161894 Maputo Radio Mozambique Network in Portuguese 1030 GMT 24 Aug 94*

[Excerpt] The proceedings of the 8th session of the Assembly of the Republic resumed in Maputo this morning. The Mozambican Government is drafting a specific program on climatic changes in the country with the assistance of the U.S. Government, which has already sent technicians to our country. Mineral Resources Minister John Kachamila says that the program will last two years and implement the UN Convention on climatic changes. Kachamila also said that the government will draft a law on environment [word indistinct] even though all conditions do not exist in our country to implement this law and said that, for instance, all cars in the country use gas with lead, a product which has already been banned in the United States and Europe. Kachamila asked whether such a ban is possible in Mozambique or for cars which emit excessive exhaust. [passage omitted]

SOUTH AFRICA**Criticism of Country's Accession to UN Toxic Waste Agreement Detailed***MB0808084294 Johannesburg NEW NATION in English 5-11 Aug 94 p 11*

[Report by Lena Slachmuislder]

[Text] South Africa officially became part of a United Nations agreement regulating the international toxic waste trade this week, but opponents to the agreement have slammed its failure to unconditionally ban the import of toxic waste. The former South African government officially joined the Basel Convention on May 5, merely five days before the new government was inaugurated.

It takes applicants 90 days to become fully-fledged affiliates of the Convention and South Africa's membership was confirmed this week. The Convention regulates the trade of toxic waste, but allows for it to be imported in cases where substances could be recycled or recovered. Now, opponents to the Convention are calling for the alternative Organisation of African Unity (OAU) sponsored, Bamako Convention—which bans the import of toxic waste—to be ratified instead.

According to the Environmental Justice Networking Forum (EJNF), the Basel Convention, which began in 1989, is "a smokescreen agreement" which ensures that the vested interests in the international toxic waste trade are protected.

EJNF coordinator Chris Albertyn said that the Bamako Convention of 1991 arose precisely out of "disgust" at what African countries considered a "sellout" at Basel.

According to the Basel Convention, situations like in the case of Thor Chemicals—which imported toxic waste under the pretext of recycling mercury—could be repeated. However, Deputy Director of Hazardous Materials at the Ministry of the Environment, Willem Scott, said that tight laws in South Africa will ensure that situations like Thor Chemicals do not happen again. "We plan to introduce a regulation whereby any import of hazardous substance will require a compulsory insurance of R5-million [rand] in the event there is a need for a clean-up," said Scott.

"As well, we will only allow the import of waste to be recycled if we in South Africa need that material, not just so that it can be sold back to another country, as in the Thor case."

Yet critics of importing waste have pointed out that substantial resources will be needed to monitor future recycling projects, and at the moment the Ministry of Environment has not put its money where its mouth is.

The pre-election budget of the Department of Environment Affairs (which is understood not to have changed much) allocated R73-million to conservation, R25-million to Antarctic research and only R1-million to pollution and waste control. This is far too little to establish proper monitoring mechanisms of toxic waste, say critics.

Scott said that regulations indicating how South Africa would comply with the Basel Convention would be printed this month in the Government Gazette for public comment.

Asked if the new government could reject the Basel Convention in favour of the Bamako Convention, he said: "We can't get out of it now."

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However, Scott added that the government could still sign the Bamako Convention as well. Although 20 African countries signed the Bamako Convention in 1991, 10 countries need to ratify it by passing laws within their countries before it becomes legally effective. Presently, Libya, Mauritius, Tanzania, Zimbabwe and Tunisia have ratified the agreement. "This

is an opportunity for South Africa to show strong political leadership for the rest of Africa," said Albertyn.

The Bamako Convention also falls in line with a recently released ANC Foreign Affairs discussion document, which promises to support the convention.

Government Urges Development of 'Pollution-Free' Food*OW1008134294 Beijing XINHUA in English
0923 GMT 10 Aug 94*

[Text] Chengdu, August 10 (XINHUA)—The Chinese Government is encouraging the development of pollution-free food to protect the ecological environment and upgrade agricultural production.

Pollution-free food, or "green" food, is a kind of high-quality nutritious food produced strictly under national hygiene standards.

The Beijing Xijiao (Western Suburbs) Farm is raising silver carp in water supplied from wells to prevent the fish being poisoned by mercury or chemicals.

Fruit in the Xinjiang Uygur Autonomous Region is free from pesticide contamination.

So far, more than 400 kinds of food products have been listed as "green" by the Ministry of Agriculture.

Environment Official Urges Action on Worsening Pollution*HK1308054794 Hong Kong EASTERN EXPRESS
in English 13 Aug 94 p 9*

[Article by Elaine Chan]

[Text] Pollution is worsening in China's cities, and spreading to the countryside as a result of the expansion of rural township industries, China's National Environmental Protection Agency director said yesterday. Xie Zhenhua said results show that "very few" of the country's 500-plus cities have met the grade one national standard for air quality. "The (atmospheric) concentration of total suspended particles in some cities is more than a dozen times higher than the World Health Organisation standard," Xie said. "A few cities are even 'invisible' from satellites."

At the Green World Expo '94 in Hong Kong yesterday, Xie said China's environmental problems were mainly those of pollution and ecological destruction. "Eighty-six per cent of the rivers flowing through cities are seriously polluted, giving rise to evident riverside pollution belts."

Pollution in some important lakes, including Chaohu Lake and Dianchi Lake, has caused damage to urban water supplies. "In some rural areas, it is quite common for a small paper mill to pollute a whole river," Xie said. China generates 600 million tonnes of solid industrial waste every year. Accumulated waste now occupies more than 50,000 hectares of land.

About one-third of the country's farmland suffered from soil erosion, he said, and 100 million hectares of grassland has been degraded. The area of damaged grassland is expanding by more than 1 million hectares per year. "Off-shore pollution and overfishing are getting worse," Xie said, noting that there were 19 serious red tide (algae)

cases in 1993. "Ecologically fragile areas in the north-western region require urgent treatment," he said.

New or revised laws would be introduced in the next two years, covering the atmosphere, rivers, oceans, nuclear waste, township enterprises service industries, solid waste and noise pollution.

Xie acknowledged that continued population growth on the mainland and attempts to accelerate economic growth has made it more difficult to deal with environmental problems. "A net annual growth of 15 million people means an enormous pressure in terms of demand for resources.

"In some regions and economic sectors, the pursuit of growth rate and output value has overshadowed the attention and concern that should be given to efficiency and quality.

"China once followed a wrong population policy. If it does not respond (to the environmental crisis) right now in a correct and forceful manner it may have to face the same consequences as caused by the excessive growth of population."

New regulations and guidelines include an "environmental protection target responsibility system" under which local government bodies are to be held accountable for protecting the environment from damage. The system stipulates that local governments must accomplish a certain number of environmental protection targets during their terms of office. At present, all city mayors of provinces were required to sign an environmental responsibility contract with the higher level of government.

Plans to expand China's environmental protection industry would form a key part of the country's green plans, he said. The industry's output value was only US\$1.13 billion [bn] (HK\$8.88bn) [Hong Kong dollars] last year, compared to US\$30bn for the whole of Asia. Xie admitted China was unlikely to meet its target of eliminating the production of chloro-fluorocarbons (CFC's) by the year 2000 because of a lack of money. "Achieving this will require US\$1.5bn in investment, but so far we have spent only US\$20m [million]," he said. "This is only one example of our funding problems in the environmental area."

Beijing To Build 'Permanent' Green Belts*OW1508130794 Beijing XINHUA in English
1253 GMT 15 Aug 94*

[Text] Beijing, August 15 (XINHUA)—Beijing will build permanent green belts in its downtown area and areas between the city proper and its satellite towns, as a way to protect the environment of the capital.

The green belts will be built on vacant lots between downtown Beijing and the suburban areas, which cover 240 sq km. The green belts, totalling 130 sq km, will account for 50 to 60 percent of the vacant lots.

Furthermore, green belts will also be built along both sides of the ten national highways and the seven main roads linking Beijing with its satellite towns.

A 100-m-wide belt surrounding the satellite towns and a 50-m-wide belt surrounding the city proper will be set aside specially for permanent green belts.

'Biggest' Conservation Project Funded by World Bank Underway

OW2508134694 Beijing XINHUA in English
1249 GMT 25 Aug 94

[Text] Beijing, August 25 (XINHUA)—A two-billion-yuan project to curb severe water and soil erosion in parts of the loess plateau has started in three Chinese provinces and one autonomous region, a water conservancy official said here today.

Cui Boxun, deputy director of the international cooperation department under the Ministry of Water Conservancy, said the project, with a World Bank loan of 150 million U.S. dollars, is not only the largest of its kind in China but also the biggest for the bank.

According to an agreement signed by China and the bank two months ago, the Chinese Government, local governments and farmers in the projected areas of 15,000 sq km will invest about 800 million yuan (91 million U.S. dollars) in the project.

The eight-year project includes parts of Inner Mongolia and the provinces of Shanxi, Shaanxi and Gansu, which have a population of nearly 1.3 million people living in need mainly caused by the century-long severe water and soil erosion.

Cui said that about 93 percent of the 15,000-sq-km area, which accounts for 2.3 percent of the loess plateau, suffers such severe water and soil erosion that about 5,000 to 26,000 tons of sand per square kilometer are washed away each year.

In comparison, 67 percent of the 640,000-sq-km loess plateau, which covers parts of seven provinces and autonomous regions, has this problem.

The century-long erosion, which has caused China's second largest river, the Yellow River, to contain so much sand that the water in its middle and lower reaches looks yellow, are responsible for the general infertility of the land on the whole loess plateau and the resultant poverty.

The project was designed to curb the erosion, improve the area's ecosystem and eliminate abject poverty, the official said.

To conserve water and soil and improve the ecosystem, terraced fields will be built and trees and grass will be planted on a large scale.

Cui said that each of the small river basins will be harnessed as a unit and used for the development of agriculture, forestry, animal husbandry and fruit.

The plateau, which is rich in light, heat and land resources, is suitable for quality farm produce production, in such crops as grain and fruit.

The per capita share of land is 1.3 ha, about ten-fold above the national average.

According to plans, factories will be set up in the projected areas to process locally-produced farm produce, thus increasing local farmers' income.

As part of the project, basic facilities for transportation, water and power supply will be built in the areas to improve farmers' living and production conditions.

It is planned that after completion, the erosion of sand will be cut by about 40 million tons each year in the projected areas, about one-third of the total sand lost to rivers.

Cui said that the per capita share of grain will be increased to at least 500 kg from the present 378 kg, and the per capita annual income will be raised to 830 yuan from the present 307 yuan.

"The success of the project will not only promote harnessing of the whole plateau, but also accumulate experience for China's environmental protection and similar projects of the World Bank," the official said.

Research, Technological Efforts a 'Big Boost' for Afforestation in North

OW2508133494 Beijing XINHUA in English
1254 GMT 25 Aug 94

[Text] Yinchuan, August 25 (XINHUA)—Research achievements have proved to be a big boost to the afforestation campaign in China's Green Great Wall project that spans across northeast, northwest and north China.

Official sources said that since the project was launched 15 years ago, more than 100 research achievements have been applied to the afforestation on an area of 2.57 million ha.

The research results have ensured high survival of trees, environmental experts said.

Due to adverse natural conditions, such as ecological deterioration, aridity, windstorms and soil erosion, it has long been a headache for both the local governments and people to plant and preserve trees in the area.

Statistics show that practical technologies have been introduced in 22.5 percent of the areas suitable for afforestation, helping raise the survival rate from 54 percent to 85 percent.

To promote the application of practical research results in afforestation, local governments have promulgated a set of preferential policies.

They have also mobilized local researchers to become directly involved in the afforestation campaign.

Officials said that scientists in the "three-north" area have largely succeeded in planting trees in arid areas, enabling China to rank among the most advanced in the world in this regard.

The China Institute of Forestry, joined by several other scientific bodies, has put forward five technologies enabling the planting of trees in special soils formerly thought improper for trees, such as in gneiss-type soil.

So far the technologies have been applied to an area of 200,000 ha, and they are expected to reduce soil-loss by some 73 percent in three to five years after trees are planted.

Experts surmise that the "three-north" area now leads the world in aerial seeding, which has been promoted to as far as areas with a yearly rainfall of less than 100 mm as in Qiqihar, in northeast China's Heilongjiang Province.

Statistics show that aerial seeding has turned 40,000 sq km of deserts into a greenbelt.

'Rapid Increase' in Baiyangdian Lake Water Level Reported

OW2408143294 Beijing XINHUA in English
1411 GMT 24 Aug 94

[Text] Shijiazhuang, August 24 (XINHUA)—The water level is up in Baiyangdian Lake...and, as a result, so is the number of tourists. Once seriously effected by seriously low water levels, the largest fresh water lake in north China has been undergoing a rapid increase in its water level since the end of July.

The standard water level of the lake reached 8.2 meters Monday [22 Aug], and the water level may soon rise to 8.5 meters shortly.

Baiyangdian Lake is reputed as a "shining pearl" in north China. The lake has an area of 366 sq km, consisting of 143 small lakes that connected together.

The lake is famous for its rich water resources and beautiful scenery, which attracts many visitors from both China and abroad.

Keeping the lake clean and the water level up is an important issue that received public attention. According to a local prefectural government official, the state and the local government has put tens of millions of yuan into treatment of pollution in upper stream of the lake and has increased the water reserve in the three reservoirs in its upper stream.

Success Reported for Chang Jiang Soil Conservation Project

OW2408143394 Beijing XINHUA in English
1407 GMT 24 Aug 94

[Text] Wuhan, August 24 (XINHUA)—The five-year water and soil conservation project on the upper reaches of the Chang Jiang river has helped local areas embark on a fast development track.

Sources from the China Chang Jiang River Water Conservancy Committee said that the per capita grain consumption and income in the local areas have been hiked up to 450 kg and 525 yuan, respectively 1.23 and 1.78 times the amounts before the project was launched five years ago.

The river valley of the upper reaches of the Chang Jiang river covers some 1.005 million sq km spanning Qinghai, Yunnan, Sichuan, Guizhou, Gansu, Shaanxi and Hubei Provinces and the Tibet Autonomous Region.

For years the areas had suffered severe soil erosion, desertification and petrification due to heavy precipitation, steep slopes, rampant cutting of trees and irrational exploitation of natural resources.

As a result, more than 20 million people in more than 200 counties and 400 towns were threatened by frequent mud-rock flows and landslides.

In 1988, the State Council listed the areas in the upper reaches of the Chang Jiang river as one of the regions most in need of soil conservation. Therefore the Chang Jiang River Water Conservancy Committee was called in to implement concrete measures.

In one of the pilot protection zones in Suining, the forest coverage rate has risen by 19 percent and grain output by 2.57 million kg in the past five years.

During the period, more than 1.6 billion yuan has been channeled into the soil conservation project, 80.4 percent of which was invested by local residents.

Officials said the project has helped improve the soil quality of some 26,300 sq km and reclaimed 190,000 ha of farmland.

They said that commercial plants and trees have been planted on some 238,000 ha of farmland, generating 350 million yuan in annual output value. And trees have also been planted on more than 600,000 ha of farmland for the sole purpose of soil protection.

In the three gorges dam area in Sichuan, the soil conservation project has greatly improved the ecological conditions for the newly-arrived migrants.

Experts said that soil erosion in an area of more than 11,700 sq km is expected to be curbed during the third stage of the project, which covers the period from 1994 to 1998.

Guangxi Formulates Law on Protection of Wildlife

HK2408144594 Beijing ZHONGGUO XINWEN SHE
in English 1315 GMT 24 Aug 94

[Text] Nanning, August 24 (CNS)—A local law on protection of wild animals was recently worked out and promulgated by the Standing Committee of the People's Congress of the Guangxi Zhuang Autonomous Region.

Vice-Chairman of the standing committee, Mr. Wei Jisong, said here yesterday that the legal document was formulated in accordance with the related state laws and the reality in the Region. A prominent feature of this local law was to give severe punishment to those people found guilty in this sector.

Guangxi is very rich in wild animal resources. There are over 810 kinds of land-dwelling vertebrates available in the Region with the varieties of birds and reptiles

accounting for nearly half of the country's total and that of beasts one third of the total in the country. Some 121 varieties of land-dwelling wild animals in the Region have been listed as key state-protected ones in the country.

According to the official, many places, especially border markets and trade fairs in the Region, have, however, become the entrepôts for wild animals. Activities of speculation, trafficking and smuggling of such animals are rampant at those venues. Since 1992, some 520 cases of illegal purchasing, trafficking and selling of wild animals have been discovered by the Regional authorities and dishes made of such animal meat can also be often seen in some restaurants and hotels there. The enacting of the law will greatly promote the drive for protection of wild animals there.

City in Jiangsu Province 'Shifts Focus' Toward Environmental Protection

OW2008125094 Beijing XINHUA in English
1159 GMT 20 Aug 94

[Text] Suzhou, August 20 (XINHUA)—Suzhou city in east China's Jiangsu Province has shifted its focus toward environmental protection, in hopes of attracting more overseas investments.

The city's economic development has been gaining momentum since the nation-wide reform and opening 15 years ago. Last year, the local gross product surpassed 50 billion yuan (about 5.7 billion U.S. dollars).

Two economic development zones under the city have nailed down their industrial structure and enterprise locations in line with the national standard of environmental protection, according to a official here.

About 27 percent of the zones' area is now afforested.

He added that the two zones have approved more than 170 projects involving 1.7 billion U.S. dollars.

The trend of environmental protection has spread to Suzhou's suburban areas.

Thanks to local government's efforts on environmental conservation, which featured a sewage disposal plant and a heat and power plant in Suzhou's Luzhi township, a Hong Kong businessman invested two million U.S. dollars in building joint ventures there three years ago.

For similar reasons, the Jiaozhi township, in Wuxian County, approved 85 overseas-funded enterprises and contracted investments worth 205 million U.S. dollars by the end of last year. Both figures topped other townships in the province.

Japanese Expert Cited on Desertification Problem

OW2108045694 Beijing XINHUA in English
0233 GMT 21 Aug 94

["Feature" by Xu Zhanqian: "Green, Green, His Dream is Green—Japanese Expert on Desert Control in China"]

[Text] Hohhot, August 21 (XINHUA)—Standing there for the first time, the Japanese expert on desert control was deeply impressed by the vast desert before him.

Almost at the moment he saw it Seiei Toyama made up his mind to make this vast and barren Engarbei Desert in northern China's Inner Mongolia Autonomous Region green in his life time.

"Maybe it's the last thing I can do here in China," murmured the 85-year-old Japanese expert.

Previously, he had helped make deserts in Asia, Africa, the Middle East and Latin America green.

In his own motherland all the deserts have been greened under his guidance, except for one square km in Tottori, which is deliberately kept in its original barren condition in memory of Toyama's outstanding contributions.

Now three years have passed. A total of one million poplars have been planted in the Engarbei Desert, and some of them were planted by the Japanese expert himself.

"That is just the beginning of my whole scheme," said Toyama.

The veteran expert has a dream: The desert will some day become a green land where villages, towns and even a city may spring up.

"I want to make it a world model for desert control," he said.

To make his dream come true, Seiei Toyama has been shuttling between China and Japan for the past three years, collecting donations and mustering support in Japan for his plan of greening the Engarbei Desert.

The Japanese media has covered his efforts extensively and many Japanese have volunteered to plant trees in the desert. Some of the later have even asked to remain there and help the expert to realize his dream.

Among them are his son and grandson; the three generations now have the same dream.

Toyama's dream can be traced back half a century. He toured to the Yellow River region by cart in 1935 while he was studying in China. The deserts of western Inner Mongolia impressed him so much that he decided to remain.

He bought a piece of waste land in the suburbs of Baotou, a city in Inner Mongolia and wanted to set up a farm there. But the invasion of the Japanese Army smashed his dream.

In the early 1960's Toyama's achievements in desert control in Tottori drew world attention. China's late Chairman Mao Zedong invited him to help China with desert control, but he failed to come due to the political situation at the time.

It was not until 1979 that he came to China again to fulfill his long-cherished dream.

Earlier, the Japanese expert had already made some of the rocky areas green in northwest China's Gansu Province and the Ningxia Hui Autonomous Region.

Back home he bought plant seeds from a Japanese gardening institute and asked farmers to sow them on waste land and sell new seeds back to the institute.

He grew rice, wheat and medicinal herbs in the sands of Engarbei; he even planted vegetables and fruit trees there. He succeeded, but he never stopped trying new species with new methods.

But desert control is not the only thing he is concerned about. A Sino-Japanese solar power station has been set up there and a food-processing center is being established with his advice.

To make his dream come true as quickly as possible, the veteran expert takes no holidays. He works 20 hours a day, watering and trimming trees, measuring land, overseeing bulldozing, writing reports and giving lectures to technicians.

"I'm not a workaholic," he said, "but I have no right to idle my days away while millions of people are being threatened by deserts."

"I want to see green all around me," he said. "Green is the color I love most."

Green, green, his dream is green.

Shanxi Province To Receive World Bank Loan for Soil, Water Conservation

*OW2108132694 Beijing XINHUA in English
1246 GMT 21 Aug 94*

[Text] Taiyuan, August 21 (XINHUA) —Shanxi Province in north China will receive a World Bank loan of 37 million U.S. dollars in the coming September for soil and water conservation on the loess plateau, according to a local government official.

The money will be used to control soil erosion and water loss in 64 villages and towns in the northwestern part of the province. The project, which will take eight years to complete, is expected to benefit 440,000 people.

In recent years Shanxi has used foreign capital to improve ecological environment on the loess plateau and to develop agriculture in mountainous areas.

Since 1992, the World Food Program of the United Nations has rendered free economic aid to three poverty-stricken counties in western Shanxi. The assistance helped to improve incomes of 61,000 local people and train 26,000 farm technicians. The region will receive 12 million U.S. dollars over the next two years.

The province has also received funding from Britain and Germany for agricultural development.

Hebei's Chengde Moves To Boost Afforestation

*OW2108133294 Beijing XINHUA in English
1319 GMT 21 Aug 94*

[Text] Beijing, August 21 (XINHUA)—Chengde city in north China's Hebei Province has planted forests covering 740,000 ha over past 15 years, and the survival rate has reached 80 percent.

Being the location of the headwaters of Beijing's two major reservoirs, Chengde has shifted its focus to afforestation as a breakthrough for local economy since the beginning of the nationwide reform and opening 15 years ago.

To date, the city has 93 forests each covering more than 670 ha, and a forestry project ranging from shelter forests, water resource conserving woods to economic forests is shaping up.

Statistics show that the city's forest coverage has reached 1.4 million ha, and its timber reserve has jumped to 31.6 million cu m, making up 43.1 percent of the province's total.

So far, the forest coverage rate in Chengde is 35.7 percent, 20 percentage points over the province's average.

Last year saw the city produce 100,000 cu m of timber and 187,000 tons of fruit, as well as generate a forestry output value of 610 million yuan (about 70.9 million U.S. dollars), accounting for ten percent share in the city's gross product.

To promote local tourism the city has set up six state and provincial forest parks.

The afforested urban areas have increased to 8.4 million sq m, up from 6.4 million sq m in 1982.

The city received tourists from both at home and overseas totaling 1.3 million last year, and earned 150 million yuan from tourism, a 14.8 percent rise from 1992.

The city government signed 91 contracts for foreign investment involving 160 million U.S. dollars last year, double the figure for the previous year.

Thanks to the city's efforts, 1.2 million ha of grassland and 300,000 ha of farmland are under protection.

Report Views 'Progress' in Shanxi Wildlife-Trading Case

*OW2108223694 Beijing Central Television Program
One Network in Mandarin 1411 GMT 17 Aug 94*

[Announcer-read report over video; from the "Night News" program; passages within quotation marks recorded]

[Text] After remaining unsolved for four years, a case involving illegal trading of wildlife on the state's priority protection list produced some progress with the arrival of a press delegation for China March Toward Environment Protection '94 in Yuncheng, Shanxi Province.

[Video shows still pictures of wild animals, then switches to show a handwritten memorandum detailing the case. Video then shows the exteriors of two companies, stacks of cartons containing animal parts, large machinery, and citation plaques on walls] The case originated from a traffic accident on 28 March 1990, in which a heavy-duty truck collided with a train at a grade crossing in Shanxi during the small hours. When the police went to the scene, they found that the truck carried (more than 7,000 cases containing parts of) ibex and Mongolian gazelle, which are listed as the state's second category of protected animals. The animals were bought illegally from Qinghai by the Beiti Animal Husbandry, Industry, and Commerce Joint Company in Yongji County, Yuncheng Prefecture, Shanxi Province. After the incident, the departments concerned formed a joint investigative team to extensively look into illegal trading of wildlife on the state's priority protection list in Yuncheng. The team found that as part of their trading activities, six enterprises in the prefecture illegally bought and processed nine types of wildlife for sale. Through investigations, the officials in charge of the (no. 329) major wildlife profiteering case determined that in the year since the Law of the People's Republic of China on Wildlife Protection went into effect on 1 March 1989, the Beiti company illegally bought 3,574 Mongolian gazelle worth more than 450,000 yuan. According to gazelle breeders, a profiteering case involving more than 300,000 yuan is considered major, while a case involving less than 300,000 yuan is handled through the imposition of administrative fines. The Beiti company was entered into criminal records in April 1990. After the investigative team left Yuncheng, however, local officials, acting under various pretexts, reduced the recorded number of Mongolian gazelle illegally bought by the Beiti company to 1,214, with a value of more than 230,000 yuan. As a result, a fine was assessed against the Beiti company in 1991. Another enterprise was also subject to a fine.

[Video shows three copies of a written decision to impose fines, a middle-aged man speaking to a male reporter in a room, another middle-aged man speaking to the same reporter outdoors, the exterior of the Beiti company, workers processing meat inside a factory, and a middle-aged man unidentified by caption as the Yuncheng prefectural party committee secretary speaking to the same reporter] Nevertheless, the decision to impose fines was never enforced. It was only when the press delegation for China March Toward Environmental Protection '94 arrived in Yuncheng on 17 June 1994 that some industrial and commercial departments in Yuncheng received 410,000 yuan in special fines from the six enterprises. Why were the fines not paid until after three years had passed? When a reporter asked the person in charge of the Beiti Animal Husbandry, Industry, and Commerce Joint Company, the latter said: "We had no money with which to solve the matter." The answer provided by the person in charge of the Yuncheng Animal Husbandry, Industry, and Commerce Joint Foreign Trade Company—another enterprise engaged in illegal trading of Mongolian gazelle involving sizable amounts of money—was almost the

same: "We lost more than seven million yuan to natural and man-made disasters. We could not even pay our workers and staff members their salaries." It is reported that the Beiti company, which earns \$3.8 million in foreign exchange annually and reaps an annual profit of more than 1.8 million yuan, is one of the village-run enterprises in Shanxi with the most foreign exchange earnings. The Yuncheng Animal Husbandry, Industry, and Commerce Joint Foreign Trade Company is listed as the largest enterprise in Shanxi that exports agricultural and animal products. Why did the case remain unsolved for four years? Wu Ang, secretary of the Yuncheng prefectural party committee in Shanxi who served as Yuncheng prefectural commissioner when the (no. 329) case occurred, explained: "The case was not thoroughly dealt with because of changes in the government term. The arrival of the press delegation for China March Toward Environmental Protection '94 gave us a tremendous impetus. After studying the case, the prefectural administrative office solved the outstanding case in a single day."

[Video shows equipment inside a factory and rows of desks in a meeting room.] The case is far from concluded, however. Relevant leaders in the State Council recently instructed the State Environmental Protection Bureau and the Forestry Ministry to investigate and verify anew the facts of the case so that the matter will be dealt with all over again.

Afforestation Efforts Improve Lanzhou's Air Quality

OW1708075394 Beijing XINHUA in English
0646 GMT 17 Aug 94

[Text] Lanzhou, August 17 (XINHUA)—White swans, grey cranes and herons have come back to this capital city of northwest China's Gansu Province, after the afforestation efforts of city residents have helped improve the air quality here.

In the past ten years, more than 30 million trees have been planted on some 6,700 hectares of sandy slopes around the city. People from 286 work units have been given the task of planting trees, vegetables and flowers on the city's two mountains.

Five million willows, poplars, pines, cypresses and Chinese scholar trees, together with flowers like peonys and roses, have formed the major part of Lanzhou's green framework, environmental scientists said.

Official statistics have shown that the city's afforestation rate has risen from 14.2 percent ten years ago to the present 20.5 percent. The green area has also expanded from 1.55 sq m [square meters] to 2.59 sq m per capita.

"The green campaign has effectively improved the city's atmospheric conditions," a local official said, citing that the monthly amount of dust falling on per sq km has dropped to 29 tons in the city proper, compared with 35 tons a decade ago.

Shenzhen Mayor Stresses Improving Environmental Protection*HK1308063394 Beijing ZHONGGUO XINWEN SHE in English 1243 GMT 12 Aug 94*

[Text] Shenzhen, 12 Aug (ZHONGGUO XINWEN SHE)—Shenzhen Mayor Li Youwei, speaking at a closing meeting on environmental protection, warned that the environmental quality seen in this municipality was worsening and consequences would be very serious should no determination be made to tackle the problem.

Shenzhen once occupied the third place among cities with a score of 75.42 in an appraisal event on comprehensive harnessing of environment held in 1992 in which 37 main cities took part. An examination carried out by the municipality itself last year showed a similar result as in 1992, meaning better environmental quality seen in Shenzhen when compared with other economically developed cities in northern China.

As time goes on, the environmental condition takes a downturn and a number of environmental problems surfaced, including threat of contamination to drinkable water sources, the blackening of ground water with odd smell, a soaring amount of nitrogen oxide compounds in the atmosphere, serious noise pollution in urban area, problems of disposal of trash and hazardous material, especially in Nanshan, Baoan and Longgang districts, and serious soil erosion as a result of massive land exploitation.

There are so many difficulties when a solution to such problems is looked for. First, economic development at a rapid pace brought much more difficulty to environmental protection. Second, awareness of environmental protection held by some departments especially by the grass-root leading cadres is rather weak, while some of them even allowed wrongdoing in violation of environmental protection laws and gave shelter to offenders. Third, input of capital was not enough for facilities for environmental protection, which lagged far behind economic development.

Mr. Li, being director of the environmental protection commission on a concurrent basis, stressed that all departments had to pay much attention to protection of water sources. He added that factories which caused pollution had to be removed from the area in which water sources were under protection. Time limit had to be set for the tackling of soil erosion, which was an outcome of blind exploitation of land. Mr. Li said that land development was in no way allowed at the cost of natural environment.

The Shenzhen Intermediate People's Court at the request of the Bureau of Environmental Protection dealt with 13 enterprises which were found guilty of violation of environmental protection and received punishment.

Urban Environmental Quality Improving in Guangdong*OW1308133894 Beijing XINHUA in English 1257 GMT 13 Aug 94*

[Text] Guangzhou, August 13 (XINHUA)—The urban environmental quality in south China's Guangdong Province has greatly been improved thanks to the continuous efforts to step up legislations on environmental protection.

Reports from the provincial environmental protection department show that the comprehensive assessment results of 20 environmental factors got an average of 69.4 points, 6.5 percentage points higher than that three years ago.

The improvement in the environmental quality is attributable to the efforts of perfecting the legal system concerning environmental protection.

All the cities in the province have formulated their local regulations in line with the national environmental law.

The provincial government moved in 1992 to tighten the checking of the urban environmental quality, pollution treatment and infrastructural construction and the results were published in order to put the work of environmental protection under the supervision of the broad masses.

The government has also invested heavily in large-scaled urban gas supply systems.

Industrial pollution has now been brought under control in the province. About 82.5 percent of the heavy-metal waste water treated have reached the state set standards in Shenzhen.

Guangdong To Step Up Water Conservation Projects*OW1308135194 Beijing XINHUA in English 1306 GMT 13 Aug 94*

[Text] Guangzhou, August 13 (XINHUA)—Guangdong has planned to pour 2.8 billion yuan in 1995 into the construction of major water conservancy projects following two major floods that had battered most parts of the province Guangdong in June and July this year.

According to provincial officials, the province has invested a total of 14.5 billion yuan since 1979 in the construction of major water conservancy projects, 3.8 times the total for the 29 years before 1979.

In the 1990s, the province has set aside two billion yuan each year for reinforcing the dikes of major rivers and reservoirs, which has helped control major flood which hit the province once in 300 years.

While increasing investment and formulating relevant laws and regulations regarding the construction and protection of water conservancy projects, the province has also upgraded flood control related facilities such as forecasting, telecommunications, communications, material supply and rescue.

Official Outlines Increasing Level of Pollution in Guangdong*HK1508031794 Hong Kong SOUTH CHINA MORNING POST in English 15 Aug 94 p 8*

[Article by Chan Wal-fong, recently in Guangzhou]

[Text] Environmental conditions in China's fastest growing province of Guangdong have been gradually deteriorating as industrialisation and urbanisation reach top

gear, a senior official in the province's Government says. "Population has increased so fast that it has exerted tremendous pressure on our environment. The situation is slowly deteriorating," said Li Zhiyian, vice-chairman of Guangdong's Environmental Protection Bureau.

In Guangzhou last year sulphur dioxide, a major pollutant of the atmosphere exceeded 0.032 milligrams per cubic metre, Mr Li said. "Big coal-fire electricity plants are the major sulphur dioxide polluters. But it takes too long to build nuclear plants and there is not enough water for hydro-electric plants," he argued.

With intense emissions of sulphur dioxide and carbon monoxide (also emitted in the combustion of coal and oil), acid rain had become a major headache in the province, Mr Li said. Fifty per cent of rain in the province was acidic in varying degrees, damaging buildings, crops and other living organisms in the province, he said. It was also discovered that nitrogen oxide in the atmosphere was increasing. "Exhaust fumes have become a big public evil in the cities," Mr Li said. An official survey in Guangzhou found that the number of traffic police suffering from carbon monoxide poisoning had increased. Visibility in the city was low due to the high concentration of particles in the air, Mr Li said. "It is always grim and dusky so that the chances of seeing a blue sky is really dim."

Last year, the Pearl River Delta district was found to have a record 9.05 tonnes of dust per cubic metre a month, Mr Li said. "The government standard is no more than eight tonnes per cubic metre. But in some areas, it goes as high as 14 tonnes per cubic metre," he added. "It has everything to do with large-scale construction works where mountains were blasted for new roads and buildings. We have to bear with this for a few more years because construction for an infrastructure has yet to be completed."

Water conditions in big rivers were "all right," Mr Li said, but sections passing through urban areas were deteriorating because of untreated sewage running into the river. While claiming that environmental conditions in past years were "basically" good with 53 per cent of the province forested and more than half of the 32 rivers in the province still clean enough to provide drinking water, the official admitted that a lack of investment had made environmental protection lag behind economic development and population growth. "This is why we find ourselves so helpless, failing to put pollution under control," he said.

Last year, 0.75 per cent of Guangdong's gross domestic product was earmarked for environmental protection. Mr Li said the figure would be increased to one to two per cent in the year 2000.

'Strict' New Punishments for Environmental Offenses Announced

HK1208090094 Hong Kong EASTERN EXPRESS
in English 12 Aug 94 p 1

[Article by Bruce Gilley]

[Text] Shenzhen will be forced to pay "tens of millions" of renminbi to clean up a dangerous chemical storage site that exploded a year ago, China's environment chief said yesterday.

"The explosion had a great effect on Shenzhen. A social impact, economic losses and environmental pollution," Xie Zhenhua, the director-general of the National Environmental Protection Agency (NEPA), said as he announced strict new punishments for environmental offences.

"After the explosion we handled some things, but the pollution left behind is a long-term problem."

Xie, who was appointed the NEPA chief only weeks before the explosion, said he was determined to crack down on provincial and local governments in China which flaunt environmental regulations.

Individuals whose pollution crimes caused the deaths of more than 15 people would be given the death penalty, while others would be sent to labour camps.

"For those leaders and cadres whose behaviour seriously harms the environment, we will institute terms in reform-through-labour camps. Let them go there and think about what they have done," Xie said.

"We are currently revising all our environmental laws to hugely increase punishments."

Xie said a national research project was under way to design a special plant to handle the toxic waste of the Shenzhen blast, which killed 15 people, according to official figures.

Some estimates put the figure as high as 600.

Xie said the detoxification plant would be erected beside the Qingshuihe site "in a few years" and would make the area reusable as a storage depot.

More than 40 research institutes and companies, led by Beijing's prestigious Qing-hua University, were involved.

They include the anti-chemical warfare research institute of the People's Liberation Army, which, along with NEPA, was called in after the August 5, 1993, explosion to oversee the clean-up.

The explosion, which sent up a plume of smoke visible in Hong Kong, caused Beijing extreme embarrassment and the Communist Party General Secretary, Jiang Zemin, censured city leaders.

The 1993 annual report of NEPA said "the safe landfill of explosion wastes was under way" at the blast site but, as Eastern Express reported in May, the pockmarked field remains virtually undisturbed.

Local police said there were fears of setting off more explosions because of the potent combination of oxidisers and reducing agents that set off the blast and were expected to take "a few years" to dissipate.

Other volatile chemicals believed to remain under the site, include yellow phosphorus and sodium barium carbonate.

The vaults of the Qingshuihe warehouse were intended for the storage of meat and vegetables before the site was taken over by a PLA dangerous-goods storage company.

Responding to suggestions that Beijing fails to back words with action on the environmental front, Xie said that earlier this year he personally ordered the demolition of a new cement plant that had been built inside the Stone Forest national park in Yunnan province.

The park is a big tourism earner for China, and mainland environmentalists said they were not surprised by the move.

Xie admitted China was spending only half of what it needed to bring environmental pollution under control.

Desert Control Successes in North, Northwest Reported

*OW0908114494 Beijing XINHUA in English
0834 GMT 9 Aug 94*

[Text] Yinchuan, August 9 (XINHUA)—Desert control efforts in 260 counties in northwest and north China have resulted in an increase in the area of fertile farmland and shelterbelts.

A forest shelterbelt project in the area named as "Three North Green Shelterbelt Project" alone has turned 1.3 million ha of desert into farmland and harnessed 20 percent of the desertified land.

The effort has boosted grain production by 10 percent in the 11 million ha of arable land which used to be affected by desertification, and increased grass coverage by 20 percent on nine million ha of desert-affected grassland.

Yulin prefecture, in northwest China's Shaanxi province, has planted 1,500 km of sand-control trees which cover a total of 120,000 ha.

Beijing Hosts Seminar on Environmental Changes in Asia-Pacific Region

*OW0808135594 Beijing XINHUA in English
1254 GMT 8 Aug 94*

[Text] Beijing, August 8 (XINHUA)—Over 200 scientists from 14 countries gathered here today for a five-day seminar on global changes in the Asia-Pacific region, urging scientists worldwide to join hands to deal with pressing environmental problems.

Addressing the opening session of the meeting, which was sponsored by the Chinese Academy of Sciences (CAS), Zhou Guangzhao, president of CAS, called for greater attention to such issues as greenhouse gas-induced global warming, ozone depletion, biological species diminishing, soil deterioration, desertification, and shortage of fresh water.

"We must protect the very planet on which we live and meet the challenges imposed by these issues," he said.

According to Professor Zhou, Chinese scientists have started systematic research programs on global changes. At present, several key research projects focusing on the overall behavior and interactions within the earth system are taking shape at the national level with significant research results, he said.

China is preparing to establish the East Asia Regional Center for Global Changes, Zhou said.

"The East Asian region, owing to its unique environment and socio-economic conditions, represents one of the most sensitive areas in terms of global changes," he explained.

With the highest population density in the region, human activities have profound impact on the environment in the region, Zhou said. Global changes, in return, are also influential and restrictive to the sustainable development of the area.

China was one of the first developing countries which joined the research programs on global changes.

According to Zhou, China's aims to study global changes and its influence in China are to provide scientific basis for the government in formulating policies on environment and make scientific findings for the world's research on global change.

At the meeting scientists from Australia, Italy, Poland, Switzerland, the United States, France, Japan, Russia, Thailand, India, Malaysia, the Republic of Korea, Britain and China will have discussions on such topics as interactions between physical, chemical and biological processes, physical climate system and biogeochemical cycle, and man and nature.

Tibet Reportedly One of Country's 'Least-Polluted' Regions

*OW0808073294 Beijing XINHUA in English
0654 GMT 8 Aug 94*

[Text] Lhasa, August 8 (XINHUA)—Southwest China's Tibet Autonomous Region is one of the least-polluted regions in the country.

The environmental protection bureau of the autonomous region has proved that by years of contamination monitoring.

An official from the Environmental Protection Bureau said that this is because that the nation has taken preventive measures when working on environmental protection in Tibet.

Statistics show that the central government has invested about eight million yuan (over 922,700 U.S. dollars) in infrastructure construction for environmental protection in Tibet.

Lhasa, capital of the autonomous region, is the center of politics, economy and culture in Tibet. Densely populated, Lhasa produces 90 percent of all waste gas and water in the region.

However, Lhasa is still one of the least-polluted cities in the country.

Tibet is short of coal and oil. Farmers and herdsmen burn dung, grass and wood for cooking and heating.

During the period 1990 to 1992, the Tibet Regional Government promoted a "sunlight plan" to protect the ecological environment and solve the problem of fuel.

The "sunlight plan" means making full use of solar energy, which is a rich resource in the region. The energy saved by widely using solar cookers and solar water heaters equals to 3,000 tons of standard coal. Experts estimate that Tibet's annual use of solar energy can amount to the saving of 30,000 tons of standard coal.

The work on environmental protection in Tibet started in the mid-1970s. The government and legislative body of the Tibet Autonomous Region drafted regulations and rules on ecological environmental protection. In 1993 a supervision group was set up to supervise the enforcement of these regulations.

Tibet, a region of 1.2 million sq km, abounds in natural resources. It has the largest forest reserves in the country—over two billion cu m—and more than one third of all the animals that are under the key protection of the state, or 125 kinds, can be found in Tibet.

In 1992 specialists found some 3,800 black-necked cranes when doing research in Tibet. It had been reported that there were less than 1,000 black-necked cranes left in the world.

The Tibet Autonomous Region set up six more nature reserves last year, with a total area of 289,900 sq km.

Tibet's Environment Reportedly 'Much Improved' Due to Afforestation Efforts

*OW2208112294 Beijing XINHUA in English
0959 GMT 22 Aug 94*

[Text] Lhasa, August 22 (XINHUA)—Thanks to years of effort for afforestation in the Tibet Autonomous Region, the local ecological environment has been much improved with wind speed reduced by 30 to 40 percent and grain output rising about eight to 20 percent.

Reports from the regional forest department show that the total forest area in the region in 1993 topped 6.12 million hectares and the forest coverage rate was 9.84 percent.

According to the reports, the region has planted over 23,000 hectares of trees and 46,000 hectares of grass since 1951.

Forest protection belts have been built along rivers and valleys in the Shannan and Xigaze Prefectures, according to the department.

Lacking vast stretches of forests, Xigaze city managed to harvest only 1,500 kg of grain per hectare before 1959. But in 1993, the output there increased to more than 5,000 kg per hectare due to a forest belt built along the banks of the Yarlung Zangbo River.

In Shannan Prefecture, six million trees have been planted since 1988, forming a 150-km protection belt, which reduces the harmful effects of drifting sand on highways and crops and can produce 10,000 tons of grass annually for sheep and cows.

World Bank Makes Loan to Shenyang for Waste Treatment

*OW1708143594 Beijing XINHUA in English
1401 GMT 17 Aug 94*

[Text] Shenyang, August 17 (XINHUA)—This capital of northeast China's Liaoning Province, will get ten million U.S. dollars-worth loans from the World Bank to improve its environment.

Local environment protection officials said that this is the first time that the World Bank has offered funds for the city's environmental undertakings.

The loans will be used in building waste-treatment facilities, an automatic waste-water monitoring system and an information and training center for environment protection.

The waste treatment project, costing seven million U.S. dollars, will be able to treat 20,000 tons of solid waste and 65,000 tons of liquid waste a year.

Further on World Bank Loan to Shenyang for Waste Treatment

*OW1708043894 Beijing XINHUA in English
0240 GMT 17 Aug 94*

[Text] Shenyang, August 17 (XINHUA)—The World Bank has agreed to issue a loan of 10 million U.S. dollars to Shenyang, capital of northeast China's Liaoning Province, to support the city's environmental protection efforts.

The funds will be utilized to build waste treatment facilities, a waste water supervision system and an environmental protection information and training center.

At present, a waste processing center covering an area of 120,000 sq m is being constructed in a northern suburb of the city.

Shenyang, a heavy industry base in northeast China, discharges big amounts of hazardous waste material every year.

Essentials of '21st Century Agenda' Detailed

*946B0081A Beijing KEJI RIBAO in Chinese 16 Jan 94
p 1*

[Article by Yang Zhaobo [2799 0340 3134]]

[Text] On 15 April, the State Council News Offices held a news conference with Chinese and foreign reporters on the circumstances of the white paper "China's 21st Century Agenda—China's population, environment, and development in the 21st Century" at which Vice Minister of the State Planning Commission, Chen Yaobang, and Vice

Minister of the State Science and Technology Commission, Deng Nan, delivered speeches and took questions from Chinese and foreign reporters.

State Council Premier, Li Peng, presided over the 10th Standing Committee of the State Council, which convened on 25 March to discuss and pass "China's 21st Century Agenda", namely the white paper "China's population, environment, and development in the 21st Century" which was formulated by the Chinese Government in the spirit of the United Nations' Conference on the Environment and Human Development held at Rio de Janeiro, Brazil in June 1992. It presents a general strategy and Government policy and actions formula for a coordinated and sustainable development of the economy, society, resources, environment, population, and education, based on the realities of China's environmental and developmental circumstances. It will be the guiding document for long-range planning for China's economy and development. It also clearly expresses the earnest will of the Chinese Government to carry out the purposeful actions and policy positions of this agenda.

In response to questions from reporters, Chen Yaobang said in facing global atmospheric changes, destruction of the ozone layer, desiccation of soils, and loss of biological diversity; and the major global economic, social, resources, and environmental questions that arise therefrom, the United Nations, after more than two years of preparations and talks, convened the Summit Conference on the Environment and Human Development at Rio de Janeiro, Brazil in June 1992. Before that conference, in June 1991, the Chinese Government took the initiative and convened a ministerial leadership conference on the national environment and development, which passed the "Beijing Declaration" clarifying the Chinese Government's standing principles on the environment and development. In 1992, the U.N. Environmental Conference passed the "Rio Declaration on the Environment and Development", "21st Century Agenda", "Statement of Principles on Forests"; and opened up the "Climatic Change Framework Convention" and the "Biodiversity Convention" for signatures. The "21st Century Agenda" asks that the governments of all nations formulate their own sustainable development strategy, plans and counter measures according to their indigenous circumstances. Premier Li Peng underscored the Chinese Government's promise to take action on the "21st Century Agenda", and in July 1992 the State Council environmental conference decided to organize and compile "China's 21st Century Agenda".

Deng Nan said, in August 1992, based on the decision of State Council's Environmental Protection Conference, that a leadership team headed up by the Vice Ministers of the State Planning Commission and State S&T Commission was established, which organized and directed the issuance of a priority project plan and the text for "China's 21st Century Agenda". At the same time, it created a working unit composed of over 300 well-known experts from 52 departments, and set up a "China's 21st Century Agenda Administrative Center" to take care of the daily

administrative affairs. The textual composition was overseen by the U.N. Planning Department (UNDP), and the context and implementation of "China's 21st Century Agenda" will be listed as a cooperative project with the Chinese Government.

It was explained that while "China's 21st Century Agenda" was being drawn up, the various departments were organized to work out a "China's 21st Century Agenda priority projects plan" which will be the driving mechanism that will break the agenda down into workable projects, and that will be one of the important steps in the implementation of "China's 21st Century Agenda". This plan is an on-going plan. There are about 60 projects in the first batch of key priority projects that have been selected out for seeking international cooperation.

There are four major parts to "China's 21st Century Agenda" and their contents are as follows:

Part I

The overall strategy for sustainable development. This part, examines the background of needs, strategy, and policy measures for sustainable development in China, proposes targets for development of primary industries and social development to the year 2000, and policies pertaining to the sustainable development of those targets. This includes establishing a Chinese system of laws and regulations for sustainable development, and passing legal guarantees that, through relevant policy-making processes, every level of society: women, children, minorities, workers, and scientists and technicians, will have a role to play in sustainable development through relevant policy-making processes. It addresses the economic, technical, and taxation policies favorable to sustainable development that are to be formulated and put into effect, and gives consideration to the inclusion of natural resource and environmental factors in the economic budgeting system. It proposes the gradual establishment of development bases for "China's 21st Century Agenda" and expansion of efforts to get public and international financial support. Networking and information sharing on the existing information system will be strengthened, and special attention given to functional training of various levels of leadership and managers.

Part II

Sustainable social development. This includes improved population controls and raising the quality of the population. The people will be given guidance in the adopting new ways of living and consuming. In the process of industrialization and urbanization, small and medium-sized cities, towns, community economies, and tertiary industries will be developed, and attention will be given to expanding employment horizons. Village construction and planning, and practical land utilization will improve, and special attention will be given to put dispersed environmental management under a more coordinated and unified management mechanism. The self-development capability in impoverished areas will be strengthened, and those areas of poverty will be eliminated as soon as

possible. A natural disaster prevention system appropriate to socio-economic development will be established.

Part III

Sustainable economic development. This includes, using the market mechanism and economic measures to propel a sustainable development, and to create new employment opportunities; and to perfect a comprehensive management system for the sustainable development of agricultural industries and the rural economy. It expresses the desire to see active expansion of clean industrial production processes; to develop, as quickly as possible, environmental protection industries; and to develop diverse means of transportation. It includes raising the energy efficiency rate, heightening energy conservation, popularizing the development and utilization of cleaner types of coal, the employment of new technologies and clean-coal technology, and the development and use of new and renewable energy resources.

Part IV

Sensible use of natural resources and environmental protection. This includes, in making policy decisions

concerning the management of natural resources, selecting an appraisal system that will effect sustainable development. A scientific and technological reconfiguration of the river basins in key areas will be carried out for more comprehensive development. The best system of laws and regulations possible for protecting biodiversity and spreading out a network of State nature preserves will be enacted. Nation-wide soil depletion monitoring and information system, and use new technology and advanced facilities to control atmospheric pollution and acid rain will be set up. Ozone depleting products and technologies will be phased out. Large tracts of forest will be created. There will be laws, regulations and technical standards for getting rid of toxic wastes.

Nearly 100 Chinese and foreign reporters attended the press conference, and Chen Yaobang and Deng Nan responded to a dozen questions from reporters concerning population, resources, the environment, investments, project actions, and pollution.

This news conference was managed by Li Yuanchao, Deputy Chief of the State Council News Office.

REGIONAL AFFAIRS

APEC Environmental Officials Meet in Taipei*OW2508093194 Taipei CNA in English 0820 GMT
25 Aug 94*

[By Sofia Wu]

[Text] Taipei, Aug. 25 (CNA)—Environmental protection officials and experts from the 17 Asia-Pacific Economic Cooperation (APEC) members started their three-day meeting in Hualien, eastern Taiwan Thursday [25 Aug] to discuss new strategies for environmental protection and pollution control.

The meeting is jointly sponsored by Taiwan and Canada as part of an APEC commitment to protecting the environment.

Three Mainland Chinese environmental officials, including Wang Zhijia, a deputy department director at Beijing's State Environmental Protection Administration, are participating in the meeting.

Major topics to be discussed in the meeting include environmental protection and pollution control technologies, urban development plans, information exchanges, environmental education and standardization, economic growth and other related problems.

All the proposals presented in the meeting will be further discussed during APEC ministerial-level and leadership meetings scheduled to be held in November in Jakarta, Indonesia.

This is the first time Taiwan has joined another APEC member in sponsoring an environment-related meeting. It signifies Taiwan's determination to join in more multilateral environmental protection activities, EPA officials said. "We believe the meeting will help boost regional cooperation in environmental protection," the officials said.

APEC groups include Australia, Brunei, Canada, Hong Kong, Indonesia, Japan, Mainland China, Malaysia, Mexico, New Zealand, Papua New Guinea, Philippines, Singapore, South Korea, Thailand, Taiwan, and the United States.

Proceedings of South Pacific Forum Viewed*BK1208043094 Hong Kong FAR EASTERN
ECONOMIC REVIEW in English 18 Aug 94 p 52*

[Article by Rowan Callick in Brisbane: "United We Stand"]

[Text] To Asian logging firms and trawling fleets, the islands of the Pacific have long provided rich pickings. Tired of this exploitation by powerful neighbours, the islanders are now fighting back. Meeting in Brisbane, Australia, their leaders pledged on August 2 to take united action to protect their forests and fisheries and to develop their tourism industries.

The unified front gives the region's main political body, the South Pacific Forum, a new economic focus after 23 years of increasingly drifting debate. Under the new approach, the Forum's 15 members (which include Australia and New Zealand) will jointly develop codes to control access to their forests and seas and provide for sustained development.

Much of the impetus for the concerted effort came from the Australian hosts, whose prime minister, Paul Keating, chaired the meeting. Keating said the group would confront leading predators—among which are Malaysian logging firms and Japanese and South Korean fishing fleets—over their "environmental piracy."

"Unscrupulous [timber] companies not only pay inadequate rates of return but also carry out logging practices that would not be tolerated in a developed forestry culture," he declared. And large foreign fishing companies don't behave any better, he claimed.

Keating and the prime minister of the Solomon Islands, Francis Hilly, announced a radical debt-for-nature swap whereby Australia will pay A\$2 million (US\$1.5 million) to halt logging in the area of the Marovo Lagoon. The lagoon, in the western Solomons, is one of the Pacific's most scenic and holds considerable tourism potential. The Solomons' timber exports, mostly controlled by Malaysian companies, amounted to US\$156 million in 1993, or 60% of the country's total exports.

The Solomon Islands Government has already sought to suspend the timber licence of Sylvania Products, a wholly owned subsidiary of Malaysian company Kumpulan Emas. This move, however, isn't directly related to the deal with Canberra. Hilly said Kumpulan Emas had violated its licence by "carrying out illegal forestry practices," a charge he didn't elaborate. Kumpulan Emas declined to comment on the issue until after company executives returned from discussions with Solomons officials.

The Forum's other timber producers—Australia, New Zealand, Fiji, Papua New Guinea and Vanuatu—agreed to monitor log exports more closely to reduce false claims as to the size or grade of shipments. A report commissioned by Canberra and presented at the meeting estimated that some Pacific island nations are losing half their potential national income through unchecked logging exports.

Although logging and fishing and prices of both commodities have increased dramatically over the last decade, the islands' economies have remained stagnant. The nations blame this partly on poor management of their resources and partly on foreign cheating. They allege that foreign firms under-report their timber hauls or sea catches to avoid paying higher taxes.

In 1993, the islands' combined income from fishing was a measly A\$50 million—on a recorded catch of A\$1.5 billion. Because of widespread poaching, the actual catch was probably far greater.

Under its new multilateral approach, the Forum plans to negotiate regional access agreements with fishing nations that will replace the current system of ad hoc pacts. Only the U.S. currently has a regional treaty, paying US\$18 million a year for five years from June 1993. Forum members, which together control an area of 20.1 million square kilometres, will also define catch limits and devise joint monitoring schemes to discourage poaching.

To boost its tourism revenues, the group also hopes to reorganise the 11 island airlines, which together lost A\$100 million in 1993. It also wants to develop a management plan for fragile coastal zones.

Summing up the mood, Keating said at the Forum's close: "There is a willingness to grasp the nettle on big problems."

Article Reviews South Pacific Forum's 'Vision' Statement

BK1908102694 Sydney THE AUSTRALIAN FINANCIAL REVIEW in English 2 Aug 94 p 5

[Article by Rowan Callick: "Forum's 'Vision' Gives Excess Logging the Chop"—all dollar figures given in Australian dollars]

[Text] The new, focused approach of the South Pacific Forum, fostered by Australia, produced significant advances yesterday on fishing, logging and rationalising the multitude of island airlines that last year lost \$100 million.

And Mr Keating and Mr Francis Hilly, Prime Minister of Solomon Islands—which depended on logs for 60 per cent of export revenues in 1993—announced a radical debt-for-nature swap through which Australia pays Solomon Islands \$2 million to halt logging by a Malaysian company in the Marovo Lagoon area.

Marovo, in the western Solomons, is one of the Pacific's most beautiful lagoons with considerable tourism potential and has been proposed for world heritage listing.

Mr Keating said of this deal: "Unless the environmental piracy of foreign logging companies operating in the South Pacific is controlled, the future for the region will be bleak."

Australia will also provide legal help to Solomon Islands to renegotiate logging licences to ensure sustainability and experts to monitor them.

The heads of government of the 15 Forum nations met at the Kooralbyn resort in the Gold Coast hinterland, unaccompanied by officials, to consider the theme established for this 25th Forum: "Managing Our Resources".

They agreed on a form of vision statement, as did the APEC [Asia-Pacific Economic Cooperation] countries at Seattle last year:

On fisheries—where the local return on a recorded annual tuna catch of \$1.5 billion is less than \$50 million: a multilateral approach, with the Forum as a whole to seek

agreements with the distant water fishing nations at their meeting in December; and greater resources to go to the Forum Fisheries Agency.

On airlines: a meeting of operators and civil aviation authorities to examine options for rationalising air services, taking into account the needs of sub-economic routes to remote islands.

On forests: they expressed "strong concern about the exploitation of tropical forests in the region", welcomed efforts by Vanuatu and Solomon Islands to halt unsustainable logging and to introduce independent monitoring via Swiss company SGS and endorsed a plan by these countries, together with Papua New Guinea, to consider uniform legislation and practices for forestry.

On tourism: noted the need to protect the region's fragile coastal zones and considered suggestions in a report based on Australia's experience.

To reappoint former Kiribati president Mr Ieremia Tabai as Forum Secretary General for three years.

Mr Keating, who both chaired the meeting and was chosen as formal spokesman, said it was important "to let wealthy nations like Japan and South Korea know that they can't acquire valuable resources for sub-economic rates of return".

The airline losses were "a very large drain on the net income of Pacific island countries," he said.

Asked whether he would raise with Dr Mahathir the behaviour of Malaysian logging companies in the region, Mr Keating said: "I haven't mentioned Malaysia, but I think the important thing is that Pacific island countries are not exploited by unscrupulous companies."

HONG KONG

Meeting With China's Environment Chief Cancelled at 'Last Minute'

HK1808041494 Hong Kong SOUTH CHINA MORNING POST in English 18 Aug 94 p 7

[Article by Kathy Griffin]

[Text] A private meeting between Hong Kong and mainland environment officials was cancelled at the last minute when China's environment chief, Xie Zhenhua, had to bow out because the gathering had not been arranged officially. Mr Xie was in town at the invitation of the green group Friends of the Earth to open their Green World Expo over the weekend, and he left on Tuesday.

He and seven of his staff were supposed to meet Environmental Protection Department officials last Thursday morning, and to visit a landfill and chemical waste treatment plant operated by the department. But shortly after Mr Xie's schedule was announced by Friends of the Earth, he sent word to the department the meeting had to be

cancelled because he was not in Hong Kong on official business. His visits to the landfill and the chemical waste plant were cancelled.

A department spokeswoman said: "We were advised he was actually coming down in his unofficial capacity, so it was considered inappropriate by the National Environmental Protection Agency to have official contact with a government department."

The acting Director of Environmental Protection, Robert Law, would not comment on the incident, but sources in the department said there was disappointment. The department is anxious to foster contacts with the Beijing officials because it is expected Hong Kong will become the largest of the National Environmental Protection Agency's bureaus after 1997.

INDONESIA

Causes of Environmental Destruction Viewed

*BK1508095594 Jakarta MERDEKA in Indonesian
12 Jul 94 p 6*

[Editorial: "The Background to the Destruction of the Environment"]

[Text] Not many people know the actual vast extent of environmental destruction and the resources which have been lost from the natural habitat. For example, last Thursday Minister of Environment Sarwono Kusumaatmaja's call for the district officials to take action against anyone who smuggles toxic waste which was considered as "a dog merely barking at a passing caravan." The press reminded the public that so far no meaningful action has been taken to instill an "effective," fitting lesson on industrialists who dispose of their industrial waste in rivers, which form the country's source of water for agriculture and sustain the biological habitat.

For instance, on 22 June 1994 a daily published in the city conducted an interview with two prominent environmentalists in Jakarta, namely, Mas Ahmad Sentosa, the executive director of the Indonesian Center for Environmental Law and his colleague, Stefanus Haryanto, on the issue of imported toxic waste. They considered that there were still difficulties in the way of solving the problem of toxic waste disposal and it seems that the issue has come to a dead end. The government's request to the respective countries responsible for the "dumping" [preceding word in English] to take back the toxic waste exported to this country did not yield any positive results.

With reference to some cases in Indonesia, it was reported that a large number of containers with dangerous toxic wastes originated from the Netherlands, Germany, Singapore and, of course, Japan. It is then obvious that, according to the Basel Convention, the countries responsible for the dumping of their industrial waste in Indonesia will have to take back their merchandise—such a method has been categorized as an illegal traffic of hazardous wastes [preceding five words in English]. According to

Stefanus Haryanto, for example, should the Netherlands Government refuse to take back the dangerous toxic waste currently lying at Tanjung Priok port, then the Government of Indonesia has the right to take legal proceedings against the Netherlands Government through the International Court in accordance to the provisions of the Basel Convention.

We consider that Environment Minister Sarwono Kusumaatmaja's call for the provincial governors and district officials to take stern action against anyone who causes environmental destruction as a positive step, in spite of the Indonesian authorities sluggishness in imposing stern measures against foreign countries, which allow its exporters to export dangerous toxic waste into the country. The government's sluggishness in dealing with such an issue can affect its credibility. If environmental destruction is allowed to continue indefinitely and only "threats" are issued instead of "concrete action" against the offenders, then our ranking officials who call for such an action will be demoralized.

All along, we have been unaware that our country's environment can be negatively affected by foreign-owned industries. To cite an example, a nongovernmental organization which has emerged in Japan is responsible for the relocation of environmentally destructive industries to the developing nations. Similar organizations also exist in Europe. If that is the case, then what was the reason behind the foreign governments' silence in connection with the cases of dangerous toxic waste exported by their citizens to our country? One of the reasons for us referring to the term "very dangerous" was, first, because it probably contained a negative connotation, that is, there could be a "collusion" between our own industrialists and the foreign exporters. Second, it looks as if we have not given full consideration to the need to conserve our country's natural environment for the future. Such an issue remains essentially as a "trust" and is handed down from one generation to another.

From the universal and philosophical point of view, it makes no difference if one is a producer of dangerous toxic wastes or an importer of such merchandise, or even if the issue is politically and economically linked, because environmental destruction is tantamount to the destruction of the ecology of the mind [preceding seven words in English]. People will have to face up to and bear a high price and our following generation will also have to pay a higher price for the progressive achievements acquired by mankind through "modern" technological advancements. The ecology and habitat that have been destroyed, including the loss of flora and fauna, are absolutely irreplaceable and not renewable [preceding word in English]. There is a philosophy regarding ecological destruction, that is, what we have presently destroyed was, in fact, our future generation's "rice bowl" and the "wall of life". In this connection, the problem should not only be solved by Sarwono Kusumaatmaja, Mas Sentosa, and his colleague, but by all of us collectively.

Minister Calls UK Media 'Narrow-Minded' for Boycott of Forest Preservation Advertisement

BK2208143994 Jakarta Radio Republik Indonesia Network in Indonesian 1200 GMT 22 Aug 94

[Text] Indonesia believes that the British electronic media's boycott of an advertisement on forest preservation in Indonesia is due to a misunderstanding. The boycott against the advertisement sponsored by the Indonesian Forestry Society took place because they adopt a narrow-minded attitude toward forestry management in Indonesia.

Forestry Minister Jamaludin Suryohadikusumo said this to reporters during a meeting of the ASEAN Inter-Parliamentary Organization's Environment and Wildlife Conservation Commission in Jakarta today. The boycott is also caused by their failure to understand the role of forestry in national development, which is more wide-ranging than they can imagine. Trees in the Indonesian forests are cut down not only to produce wood, but also to assist in transmigration and resettlement programs.

JAPAN

MITI Discloses Five 'Principles' Opposing Unilateral Environmental Sanctions

OW2308143194 Tokyo YOMIURI SHIMBUN in Japanese 16 Aug 94 Evening Edition p 1

[Text] On 16 August, the Ministry International Trade and Industry [MITI] disclosed "five principles" Japan will announce at a new multilateral conference where "harmony between trade and environment" will be a main topic of discussion. MITI will make the announcement at a quadrilateral meeting of trade ministers, scheduled to begin in Los Angeles on 9 September. The principles oppose unilateral sanctions designed to force other countries to change their environmental policies. They also oppose the environmental dumping doctrine, which says "developing countries are exporting low-priced products without taking sufficient measures to protect the environment." In this way, the principles clearly spell out Japan's considerations for developing countries.

The five principles are:

- 1) Development should be promoted while exerting efforts to encourage the coexistence of the multinational trade framework and environmental protection measures;
- 2) Japan opposes developed countries' antidumping taxes imposed on developing countries that do not take sufficient measures to protect the environment;
- 3) Rules should be drafted, in place of unilateral action, to preserve global environment through treaties signed by more than two nations;
- 4) Environmental policies should be unified and applied to every country without discrimination; and
- 5) Japan will promote technological cooperation to support developing countries environmental measures.

The United States has demanded that "trade and the environment" be the main topic for the next round of multinational trade talks. In June, an Organization for Economic Cooperation and Development (OECD) ministerial council meeting also decided to take up the issue for future discussion.

Such issues tend to have harsher ramifications for developing countries. They include how to deal with random lumbering in tropical rain forests, the result of liberalization of the timber trade, and whether it is acceptable to ban imports produced at factories that do not meet the importing country's environmental standards.

In the United States, there was a movement to use trade policies as weapons for protecting the environment. It was difficult to achieve congressional approval of the North American Free Trade Agreement (NAFTA) in 1993 because environmental protection organizations demanded that an "environmental dumping tax" be imposed on Mexico.

By submitting the five principles, Japan will clarify its stance of opposing the idea of restricting trade on the strength of protecting the environment.

Fisheries Agency Says Several Aquatic Species Face Extinction Due to Pollution

OW1908042294 Tokyo KYODO in English 0330 GMT 19 Aug 94

[Text] Tokyo, Aug. 19 KYODO—Sixteen kinds of Japanese aquatic plants and creatures, including horseshoe crabs, face extinction due to pollution, Fisheries Agency sources said Friday [19 August].

The agency began a five-year research project in fiscal 1993, the first comprehensive study of Japan's aquatic plants and animals including fish, shellfish, reptiles and mammals, the sources said.

The agency will refer to various records, conduct on-the-spot research and also analyze the influence of fisheries, to discover ways to protect the creatures, they said.

The results of the agency's first year of research have been compiled in a report which classifies 75 species into six rankings according to how urgently they need protection, they said.

The 16 species are ranked as endangered, including horseshoe crabs which "are barely maintaining" their breeding at only five tidelands in Okayama, Saga and other prefectures, according to the report. "If current conditions continue, horseshoe crabs will disappear from Japan in the early 21st century," it says.

Aegagropila waterweed, found in lakes in Hokkaido, Aomori, Toyama and Yamanashi Prefectures, is also under threat because of water pollution. The report says that to protect aegagropila plants in Lake Akan, Hokkaido, it will be necessary to limit access to the area, and saving the species in other lakes will be difficult.

In the 1950s, Asakusa-nori edible seaweed was found widely in Japan, but the report says it has been almost completely displaced by other plants introduced later into the country.

The report also ranks five kinds of freshwater fish as endangered species.

The Fisheries Agency will continue research on about 400 aquatic species over the next four years, the sources said.

Oil Leak From Grounded Chinese Tugboat Feared
OW1808122894 Tokyo KYODO in English 1148 GMT 18 Aug 94

[Text] Oita, Japan, Aug. 18 KYODO—A Chinese tugboat which ran aground off Oita Prefecture in Kyushu, western Japan, could pollute the area's fishing grounds if it starts to leak oil, the Maritime Safety Agency said Thursday [18 August].

A salvage operation failed earlier in the day due to rough seas, the agency said.

The 49-ton tug Changsheng No. 3, carrying 850 liters of heavy oil and at least the same amount of waste oil, left Shiogama in Miyagi Prefecture, northern Japan, on July 18, towed by a tanker en route to Dalian in northeastern China.

At some point the tugrope apparently broke and the tugboat was discovered on Aug. 2 floating near the island of Fukushima, where it subsequently ran aground. The tanker reached Dalian later.

The Chinese owner has promised to salvage the vessel as stipulated by international law, but has not specified when.

The site of the accident is difficult to approach due to the numerous cliffs and the high waves in the area. Damage to the ship's body could lead to severe pollution from leaking oil, the agency said.

According to the local fishing cooperative, annual catches near Fukushima amount to 3,300 tons of squid, grunt and sea bream worth 1.5 billion yen. The area also prides itself on 49 kinds of coral.

Agency Studying Connection Between Oceanic Circulation, CFC's

OW1508122794 Tokyo KYODO in English 1042 GMT 15 Aug 94

[Text] Tokyo, Aug. 15 KYODO—The Meteorological Agency has begun researching how waters circulate in the Pacific Ocean by studying moves of chloroflourocarbons (CFCs) contained in sea water to predict long-term climate patterns, agency officials said Monday [15 August].

The agency plans to wrap up the probe, part of a research project of the World Meteorological Organization, by the end of next month and report its results to the organization, the officials said.

The agency aims to determine the velocity and direction of the circulation of waters in the ocean, especially near the

seabed, by investigating the amount of CFCs at set points. CFCs dissolve into sea water.

CFCs destroy the ozone layer, which protects earth by absorbing much of the harmful ultraviolet light radiating from the sun.

Using the agency's maritime climate monitoring ship, scientists will gather samples of sea water from areas off the coast of Mie Prefecture, central Japan, to Wewak in Papua New Guinea.

At each check point, scientists will gather samples from 10 meters below the surface of the sea down to the seabed, at 25 to 500 meter intervals.

The deepest check point will be in the ocean east of Palau Islands, where the depth reaches some 5,700 meters, the officials said.

The ocean has two kinds of circulation—one seen on the surface, caused by winds, and a larger movement extending to the seabed which is the result of the differences in temperature and salt concentration.

Waters on the ocean surface circulate over a period of one to two years, while circulation in the deep sea usually takes from 1,000 to 4,000 years and is said to have considerable effects on long-time weather patterns.

On top of CFCs, the agency will also measure water temperature and volume of flowing water, salt and oxygen to forecast weather changes over the long term, the officials said.

Governments and private companies concerned throughout the world have regulated or plan to abolish the use of CFCs, which are used as refrigerants and for other industrial purposes.

Government To Appeal Antarctic Whale Sanctuary Plan

OW1208054694 Tokyo KYODO in English 0254 GMT 12 Aug 94

[Text] Tokyo, Aug. 12 KYODO—The cabinet approved a plan Friday [12 August] to lodge an appeal against a recent decision by the International Whaling Commission (IWC) excluding commercial whalers from the Antarctic Sea, declared by the IWC as a "sanctuary," government officials said.

"More than 760,000 minke whales inhabit the Antarctic Sea and it is believed this would allow an annual catch of some 2,000 whales," Agriculture, Forestry and Fisheries Minister Taichiro Okawara said in a statement. "Establishing the sanctuary lacks scientific rationale."

An international convention on commercial whaling stipulates that any country lodging a protest will not be bound by the IWC resolution.

The IWC adopted a key resolution May 26 that bars all whalers from the Antarctic Sea, saying such a step is necessary to save the giant mammal from the threat of extinction.

The sanctuary decision designated a vast stretch of the Antarctic Sea south of the 40-degree parallel of the south latitude, as well as some areas south of the 60-degree parallel, as a sanctuary off-limits to commercial whaling.

Japan cast the sole dissenting vote in the five-day IWC meeting held in May in Puerto Vallarta, Mexico.

In the 1980's, the IWC slapped an international moratorium on all types of whaling and Japan accepted the measure.

Japan has requested that the IWC authorize Japan to haul 2,000 minke whales a year for commercial purposes, on top of the 330 minke whales it catches each year under its so-called "research whaling" program.

SINGAPORE

Environmental Technology Agreement Signed With Canada

BK1308113394 Singapore BUSINESS TIMES
in English 13-14 Aug 94 p 2

[Text] Singapore and Canadian ties in the field of environmental technology were strengthened yesterday with the signing of an agreement to promote joint ventures in this field to tap a growing world market.

Canadian Secretary of State for the Asia-Pacific Region Raymond Chan witnessed the signing of a cooperation agreement between the Singapore Association for Environmental Companies (Safeco) and the Canadian Environment Industry Association (CEIA).

Minister of State for Environment Abdullah Tarmugi was one of the two witnesses of the agreement for Singapore. Ambassador at Large Tommy Koh was the other.

Steve Hart, president of the CIEA, said the support of trade organizations such as CIEA was important because most companies involved in environmental technology were small, niche businesses which found it hard to come out into global markets on their own.

With the support of the CIEA and Safeco, these companies would be able to find local partners to develop Canadian environmental technology to suit the needs of the region.

Mr. Chan said the move was part of Canada's strategy to develop environmental technology as a main industry within its economy, and that Canadian technology, partnered with Singapore's expertise in marketing and project management, would allow such ventures to tap the growing global market.

Singapore already has a similar agreement with Australia, signed in March this year.

Safeco chairman Edwin Khew said that further agreements were expected—with Malaysia, the U.S., Germany, Finland, France and the Netherlands.

Mr. Chan, on a two-day visit to Singapore, was due to hold talks with Senior Minister of State for Foreign Affairs Lim

Hng Kiang, Foreign Minister S. Jayakumar, Trade and Industry Minister Yeo Cheow Tong and Senior Minister Lee Kuan Yew.

TAIWAN

Government Seeking 'Every Possible Means' To Attend CITES Meeting

OW2208081094 Taipei CNA in English 0749 GMT
22 Aug 94

[Article by Debbie Kuo]

[Text] Taipei, Aug. 22 (CNA)— Taiwan is seeking every possible means to attend the forthcoming Convention on International Trade in Endangered Species (CITES) general meeting.

Taiwan hopes to detail its extensive efforts toward wildlife conservation during the meeting, slated for mid-November in Florida, Lin Shiang-nung, vice chairman of the Council of Agriculture (COA) said Monday [22 August].

The CITES meeting will discuss whether to call an international boycott of Taiwan products in retaliation for Taiwan's allegedly inadequate crackdowns on illegal trade in rhino horn and tiger parts.

As the CITES sanctions would be even harsher than the U.S.-imposed Pelly Amendment sanctions against Taiwan, Sun said that a Taiwan delegation must attend the CITES meeting to make a last-ditch effort to avert any damage.

The Clinton administration earlier this month announced a ban on the import of Taiwan animal products for failing to stop the illegal trade in rhino horn and tiger parts.

The ban, which took effect Aug. 19, will cause losses of U.S.\$22 million annually for Taiwan wildlife exporters. The ban prohibits U.S. import of reptile leather shoes, handbags, jewelry made from coral, mussel shells and bone, edible frog legs, live goldfish and tropical fish, and bird feathers, down and specimens.

Taiwan is not a member of CITES, a United Nations wildlife protection organization, because Taiwan is not a UN member. Under Beijing's pressure, Taiwan is not even allowed observer status in the organization.

Though not a CITES member, Lin said, Taiwan has tried its utmost to enforce wildlife conservation and put an end to illegal trade in all kinds of wildlife and products.

In fact, he added, Taiwan has been doing a better job than Mainland China, South Korea, and some countries in Africa and Southeast Asia in protecting wildlife and the environment.

Since last year, Taiwan has tightened crackdowns on illegal wildlife trade, imposed stricter penalties for offenders and reinforced wildlife conservation efforts, which include consolidating stocks of endangered species products and reinforcing labeling of such products.

To that end, Taiwan held a National Wildlife Conservation and Plant Protection Conference this month for discussion of stepped-up efforts in protecting endangered species and preventing environmental pollution.

Taiwan also beefed up its conservation police force, Lin said. More wildlife protection units will be established under central, provincial and county governments, he added.

Government Efforts To Cut CFC Use Win Support

*OW1208090194 Taipei CNA in English 0800 GMT
12 Aug 94*

[Article by Lillian Wu]

[Text] Taipei, Aug. 12 (CNA)—Taiwan's commitment to cut the use of chlorofluorocarbons (CFC) has received positive response, Vice Economic Affairs Minister S. J. Li said Friday [12 August].

Li said that the United States, Japan, Singapore, Australia and Hong Kong have affirmed Taiwan's progress in cutting CFC use, and will not impose trade sanctions on Taiwan for this reason.

CFCs are used as refrigerants in refrigerators and air conditioners, and also in integrated circuit cleaning. They are blamed for causing the depletion of the ozone layer.

Li noted that in 1993, Taiwan cut its use of CFCs by over 50 percent from 1986, when 10,159 metric tons of the chemical were used.

Although Taiwan has not signed the Montreal Protocol, it has agreed to abide by protocol regulations governing the export and use of CFC-related products.

More than 90 countries and regions signed the Montreal Protocol in 1987, agreeing to cut CFC use gradually to the level registered in 1986 and impose a complete moratorium by 1996.

Thus, Taiwan will cut the use of CFCs by 75 percent this year, 85 percent by 1995 and completely ban the use of CFCs in 1996 as called for in the protocol.

Taiwan has worked hard to cut CFC use. A new regulation effective July 1 calls for all domestic and imported automobiles to use refrigerant substitute R134A which does not deplete the ozone.

Li said that Taiwan has sent reports of its progress in cutting CFC use to the United Nations environment programme, Taiwan will also discuss the matter in diplomatic channels to gain further support from other countries.

Taipei Hosts Conferences on Wildlife Conservation

*OW1008095394 Taipei CNA in English 0833 GMT
10 Aug 94*

[Article by Lillian Wu]

[Text] Taipei, Aug. 10 (CNA)—Two large-scale conferences on wildlife conservation are scheduled to be held in Taipei later this month, it was announced Wednesday [10 August].

The Council of Agriculture (COA) will host the First National Conference of Wildlife Conservation Aug 15-16, while the Legislative Yuan will host an international symposium on nature conservation later this month.

Meanwhile, COA officials confirmed that the United States will begin to impose sanctions against Taiwan for its alleged tiger bone and rhino horn trade.

From Aug. 19, all Taiwan-made leather shoes, leather bags made from reptile hides as well as coral and shell trinkets will not be allowed into the U.S.

COA officials expressed regret over the U.S. decision to impose the sanctions against Taiwan, which will result in a great deal of damage to the island's economy.

They also hoped that the U.S. could learn more about Taiwan's efforts in protecting wildlife and its progress made in this regard.

The First National Conference of Wildlife Conservation will bring together government officials, environmental experts and private environmental groups such as the Orangutan Foundation and Beautiful Taiwan Foundation. COA hopes to map out the course of wildlife conservation strategy during the conference.

Members of international environmental organizations, such as Earth Island Institute and Environmental Investigation Agency, are expected to take part in the later symposium scheduled for Aug. 25-26.

THAILAND

New Treatment Plant To Handle Hazardous Waste Set for Chon Buri Province

*BK2208101594 Bangkok BANGKOK POST in English
22 Aug 94 p 8*

[Text] Rayong—A new treatment plant will soon be set up in Chon Buri province to handle the country's problem of hazardous waste, Wellgrow Industrial Estate board of directors member Chianchaung Kanlayanamit said.

The plant is a joint venture involving the Government, the World Bank, CGN Holding Co Ltd and Waste Management International Co Ltd.

The Government will have 25 per cent of the investment, with the balance made up by its partners.

The World Bank International Finance Corporation will provide U.S.\$150 million in financial support for the project.

The contract will be signed on Wednesday, Mr Chianchaung said.

Chon Buri's Nong Yai district was chosen as the site for the factory because of its geographical suitability. Nong Yai is in a valley far from watersheds.

The second phase of the project will be built in Saraburi. The specific location for this project has yet to be fixed.

The two plants, scheduled for completion in October next year, would have a combined annual capacity to destroy 400,000 tons of hazardous waste, Mr Chian-chaung said.

The plants will dispose of the waste in three ways: sanitary landfill, by incinerator and by recycling chemical waste.

Millions of tons of hazardous waste are produced by factories in the eastern provinces each year.

Two million tons are mixed in normal garbage and are sent to be destroyed at the waste disposal plant at Soi Onnut, Bangkok.

Some of the waste was simply discharged into rivers, including the Rayong and Bangpakong rivers, he said.

BULGARIA

Kozloduy Manager Views Plant's Future

*AU1208164494 Sofia NOVINI 5 in Bulgarian 9 Aug 94
p 2*

[Interview with Kozma Kuzmanov, general manager of the Kozloduy Nuclear Power Plant, by NOVINI 5 representative Tsvetana Markova in Kozloduy; date not given: "We May Have Electricity Rationing"]

[Text]

Markova: Mr. Kuzmanov, Bulgaria has now had a nuclear plant for 20 years. What does the balance sheet look like? Can we be satisfied with the achievements to date?

Kuzmanov: The fact that the Kozloduy Nuclear Power Plant is celebrating its 20th anniversary shows that it has utilized all its production capacity to supply the country with a vast amount of electric power, already more than 200 billion kilowatt-hours, at a low production cost. This is power produced without causing pollution and without destroying land, in contrast to the coal-fired thermal power plants. The Kozloduy Plant holds a fundamental position in the Bulgarian energy industry and the country's economy. I am convinced that our staff will continue to defend this position in the future, as they have done so far. We are marking our 20th anniversary, and this occasion, more than any other, prompts us to make an assessment of the past, during which it must be said that everything was not always rosy. First, I hope that our people have realized that a nuclear electric power plant should only be operated under safe conditions. If this is not guaranteed, the plant is shut down. This was why the No. 1 and 2 generating units were taken out of service in 1991, which led to electricity cuts and rationing in the winter of 1991-92, because the national grid lost an energy source that produced 880 megawatts.

Markova: Are the achievements of our nuclear plant commensurable with world standards and requirements?

Kuzmanov: Yes. I told you about safety with regard to the old section of the plant. The two new 1,000-megawatt units are up to world standards, while the four older ones fully conform to modern requirements. However, we still have work to do. We have to perfect the organization of our work and management and make our work more efficient. If one compares Kozloduy with the Finnish plant at Loviza [name as transliterated], we can see that we still have much to do.

Markova: What has to be done before the year's end to ensure that work proceeds normally?

Kuzmanov: The most important things have to be completed by the end of September, not before the end of the year, namely maintenance work. Unfortunately, the severe financial crisis affecting the country and the unwillingness of certain government institutions to understand the state of our energy industry and the Kozloduy Plant have already seriously hampered the timely completion of the

repair work. The work is almost a month late, and it will be no surprise if electricity supplies have to be restricted this year because of our inability to recommission the units in good time.

Markova: What has happened to the equipment, has it been released from customs?

Kuzmanov: No, it is still lying there waiting. We are waiting to hold talks with senior Finance Ministry officials, but unfortunately they are unwilling to see us. Maybe something will be done, but in my opinion it is too late now. Whatever problems may exist in a country, it is shocking that the people at the top, especially in the executive, fail to take account of circumstances and fail to consider the energy industry.

Markova: Are you troubled by what your opponents write about you in the newspapers?

Kuzmanov: No, I can say that I am not alarmed when personal attacks are made on me. The years that I have devoted to the Bulgarian energy industry and my white hairs entitle me not to give any answer to these reports and articles—I mean the ones regarding me personally. If there is any instance of me having acted wrongly, there are leaderships that stand above me. There are judicial organs and the prosecution service, which can have their say. I am glad to answer when anyone, without hidden designs, directs comments to us or to me personally as a manager.

Markova: What future awaits the Kozloduy Plant, in your opinion?

Kuzmanov: I see the plant's future as a continuous process of improving safety standards and raising the awareness of safety issues, the level of training, and the literacy of our staff who operate these complex installations. Its future also lies in improving production efficiency, in which I include exploiting the plant's installations to the maximum. The Kozloduy Nuclear Power Plant has its place in Bulgaria's energy production. It not only has a present, but also a future. The country simply needs it.

Markova: Do you support the early closure of the No. 1 and 2 nuclear generating units, Mr. Kuzmanov?

Kuzmanov: Absolutely not. However, if circumstances require it, we will have to close them down. Our task is not merely to produce, but to produce in safe conditions. The No. 1 and 2 units are designed to operate until 2004 or 2005, but there are certain problems that we still have to solve.

HUNGARY

Danube Circle Member Views Bos Dam Issue

*AU1208172394 Budapest MAGYAR HIRLAP
in Hungarian 12 Aug 94 p 4*

[Interview with Janos Vargha, member of the Danube Circle's executive committee, by Janos A. Szilagyi; place and date not given: "Vargha: No Possibility for Technical Compromise at Bos"]

[Text] The optimistic governmental hopes regarding the Hungarian-Slovak summit in Bratislava last week did not come true, Janos Vargha, member of the Danube Circle's executive committee, told MAGYAR HIRLAP. The environmentalists still see a hope for settling the Bos problem through negotiations, however, if environmental considerations are pushed into the background in the domestic decisions then they will again turn to society in the interest of protecting the Danube.

Szilagyi: What were the views of the [environmentalist] movements on the Bratislava summit?

Vargha: In our view, no progress was achieved in the Bos issue, the government's optimism was not justified. It is not clear on what grounds [Prime Minister] Gyula Horn raised his—in our view, harmful and unfortunate—proposal to reexamine the possibility of putting the Dunakiliti reservoir into operation. We agree with the cabinet that negotiations are needed and that the most important task is to ensure the survival of the Szigetkoz [area along Danube, northwest Hungary], however, this cannot be done by constructing a weir to block the Danube or by using the Dunakiliti reservoir, which would undermine the Hungarian position at The Hague.

Szilagyi: The majority of experts and politicians dealing with Bos believe that miracles cannot be expected from the decision of the International Court, we have to agree with the Slovaks before The Hague decision is made.

Vargha: It is a mistake to believe that the water barrage issue is basically a Hungarian-Slovak conflict. The clashing of two attitudes and interest groups is the actual essence of the issue. One of them stands by the ecological principles that were accepted at the Rio de Janeiro world conference and sees the Danube's animal and plant life and the drinking water stock as irreplaceable assets and, as a matter of fact, the decisive majority in Parliament also supported this view through its decisions in the previous cycle. Those in favor of the water barrage do not recognize this value. The fantasy that is nowadays mentioned as the technical compromise—which would maintain the expensive energy production on the flat land and would also leave some water for nature—does not present a solution, but increases the expenses. The politicians should take responsibility for a decision because a compromise only slows down the destruction of nature, but does not stop it. They should either decide to complete the power station according to the original plans or, based on The Hague, they should do all they can to assert the ecological principles.

Szilagyi: In recent weeks, a number of statements have been published that indicated that the small group of people forming the Danube Circle wants to force decisions by blackmailing the government and ignoring the will of people in the Szigetkoz.

Vargha: In the past years, in the case of parliamentary decisions on the Bos issue, we did not need to use the same means as in the previous regime, until 1989. This is one of the reasons the public's attention to this issue has

decreased. However, it is not true that the water barrage was only an excuse for the fight against the totalitarian system and people are not interested in the fate of the power station anymore. At the moment, we still believe that we can talk with the government on the Bos issue. However, if we find that the environmental values are pushed into the background in the decisions then we will need some means with which we can offset the regression. As for the supposed conflict of the people of Szigetkoz and the environmentalists, it has to be seen clearly that those people are responsible for the destruction of plant and animal life in the area, for the unnecessarily spent billions of forints, and the thousands of conflicts who, at the time, forced the construction of the edifice, who persecuted the members of the Danube Circle, and who decided in favor of the construction in Parliament in 1988 and even on the acceleration of the investment a year later. We always wanted to prevent any damage to the river and to preserve the natural life of the Danube for the Szigetkoz.

Szilagyi: In the past, the Danube Circle and the Alliance of Free Democrats [SZDSZ] held similar views on the necessary actions to do with the barrage. Have you become more distant from each other since the SZDSZ entered government?

Vargha: The views of the environmentalist movements and all the parliamentary parties coincided on the Danube issue for a long time. The parliamentary decisions on Bos were made with six-party consensus and great agreement. We did not have close contacts with the Free Democrats in the past, either. In addition to the democratic opposition that formed the SZDSZ's core, other people who later joined the Hungarian Democratic Forum, for example, also participated in the actions for the protection of the Danube while the members of the former Hungarian Socialist Workers' Party naturally did not join our actions. With the Hungarian Socialist Party's election victory, some people who supported the power station system in the state-party era have necessarily come to the surface. In the case of a coalition government, it is natural that the government shows a unanimous attitude to the outside, but this does not mean that everyone has the same views on the Bos issues.

SLOVAKIA

Parliament Ratifies Two Ecological 'Documents'

AU2308162894 Bratislava NARODNA OBRODA
in Slovak 19 Aug 94 p 1

[Report by Juraj Alner: "National Council Allowed Parties To Invest 10 Million Each in the Election Campaign"]

[Excerpt] Bratislava—[passage omitted] The Slovak parliament yesterday ratified the Treaty on Friendly Relations and Cooperation between the Slovak Republic and the Russian Federation, without returning to the controversies over the assessment of the August 1968 aggression. The

Russian parliament ratified the Treaty, which had been signed by the presidents of the two countries a year ago, last month.

At the proposal of Environment Minister Juraj Hrasko, parliament then ratified two ecological documents pegged to European norms—the Convention on Climatic Changes and the Convention on Biological Diversity. [passage omitted]

YUGOSLAVIA

Serbian Environment Ministry Drafting Bill on Disposal of Toxic Waste

LD2408162594 Belgrade TANJUG in English
1340 GMT 24 Aug 94

[Text] Belgrade, Aug. 24 (TANJUG)—Serbia's Environment Ministry is drafting a bill on new locations for the disposal of all kinds of toxic waste, including nuclear.

"The project should provide the legal framework for the organization of all kinds of dumps and, what is most important, for a central nuclear waste dump," Minister Jordan Aleksic said Wednesday.

Yugoslavia has no nuclear power plants in its territory and the building of such facilities is banned by a federal law adopted earlier this year.

The bulk of Yugoslavia's nuclear waste, which has so far been stored in makeshift dumps, comes from the Belgrade-based Vinca nuclear institute, along with smaller quantities discharged by hospitals.

Yugoslavia stores nuclear waste in its own territory, unlike Germany which has exported 25 million tonnes of toxic waste in the past twenty years.

POLITIKA of Belgrade on Wednesday published an article by Radoje Radulovic, professor at the Novi Sad Law

School, who asked why Yugoslavia had not sought protection from international bodies when Germany in late 1993 exported toxic waste to Albania via Yugoslavia.

"It is not known why Albania did not seek protection from the International Court of Justice. Maybe it received money to remain silent, but it is really puzzling that Yugoslavia has not referred the case to the court," said Radulovic.

Serbian Ecology Minister Calls For Closure of Nuclear Waste Dumps

AU2508085994 Belgrade BORBA in Serbo-Croatian
23 Aug 94 p 29

[V.P.M.-attributed report: "We Will Build a Central Nuclear Waste Dump"]

[Text] Pozarevac—The unpleasant experience with the Kalna mine radioactive waste, which has recently been stored in the Vinca Institute, has forced us to think seriously about this issue. As part of the new ecological program, our ministry and my party Nova Demokratija will launch an initiative that the state build a central dump for nuclear waste, because storing this waste in Vinca is only a temporary solution. In addition, we are also working on the construction of regional dumps. This was stated by Serbian Ecology Minister Jordan Aleksic.

Dumping waste all over Serbia is very dangerous. If we followed all the regulations, we would close all the town dumps. There is hardly a town, with the exception of Trstenik, where this problem has been properly solved. Despite all this, we will propose in the near future that at least two thirds of town dumps that imperil normal and healthy life be closed. Let us only recall that the majority of dumps have been built along Serbia's river banks, which is unacceptable. This was stated by Serbian Ecology Minister Jordan Aleksic in an interview for Pozarevac Radio.

ARGENTINA

Menem Announces Bill Designed To Punish Environmental Offenders

PY2208211394 Buenos Aires NOTICIAS
ARGENTINAS in Spanish 1741 GMT 20 Aug 94

[Text] Buenos Aires, 20 Aug (NA)—President Carlos Menem said today that anyone contaminating the environment could receive sentences of up to 10 to 15 years in prison, warning that when the crime results in the death of an individual the person committing it might be sentenced to life in prison. These penalties are included in a bill the executive branch has sent to Congress.

"There is no other way, regrettably, to advance on this very important path. If we do not fight this scourge as soon as possible, it will finish off humankind," the president said.

Menem made these remarks during the closing ceremony of the 66th International Law Association Conference which was held in this capital.

During his speech the president said: "The Constitution we have reformed, and which we will swear to respect next week, includes a clause, or a constitutional disposition, referring expressly to the issue of the environment."

Menem said the executive branch bill "severely punishes people who contaminate the environment—the seas, the rivers, or the atmosphere—and makes progress possible on stopping the destruction of the ozone layer."

"These people will receive sentences of up to 15 years in prison. They will receive a life sentence when the damage causes the death of a human being," the president said.

Judge Annuls Bid for Construction of Toxic Waste Plant

PY1608030494 Buenos Aires PAGINA/12 in Spanish
4 Aug 94 p 14

[Article by Alejandra Folgarait]

[Text] The call for bids for the construction of plants for the handling and disposal of dangerous detritus within the confines of Greater Buenos Aires, which is being pushed by the Natural Resources and Human Environment Secretariat, was annulled on 3 August by Judge Cristina Carrion de Lorenzo. Thus, the Federal Courts have responded favorably to the writ of amparo submitted by Juan Shroder, president of the Tieraalerta organization and a Constituent Assembly member for the Grand Front. Although Natural Resources and Environment Secretary Maria Julia Alsogaray had postponed until 6 September the opening of the offers of the controversial call for bids, the concerns of the neighbors of Quilmes, Esteban Echeverria, Tres de Febrero, and San Martin, the counties where the "toxic garbage dumps" will be installed, continue with their mobilizations and their collecting of signatures against the project. Several national and Buenos Aires Province legislators have already taken up the matter. Human Environment Under Secretary Noe Carballo had

to go before the Natural Resources Committee of the Chamber of Deputies to give an explanation, which was "totally unsatisfactory," according to Radical Civic Union Deputy Silvia Vazquez.

After the unfruitful attempts, over a period of more than 10 years, of the CEAMSE [State Ecological Belt of the Metropolitan Area] to install a plant for processing toxic waste, Alsogaray decided to settle things once and for all and, through a decree on 24 June, called for bids to install a plant on land that the CEAMSE and the Armed Forces possess in the area of Greater Buenos Aires.

"The CEAMSE limited itself to submitting to the secretariat a list of the places that could be used without any type of study regarding the capacity that was going to be used in the operation," said Marcelo Kohan, director of the organization that looks after the disposal of ordinary garbage.

Deputy Silvia Vazquez heads the opposition to the bid in Congress today. "The state has not defined the type of plant, the type of dangerous residue that it will receive, nor the adequacy of technology to process and dispose of it," said the president of the Natural Resources Committee. "According to Law No. 24,051, the secretariat has the obligation of evaluating the environmental impact of dangerous residues," she added. Moreover, the secretariat assigns that responsibility to the offerers.

Noe Carballo indicates that the instrument corresponds to a call for a "competition of projects" and not a call for bids, and therefore there is no need to set rules and regulations. "The philosophy resides in the fact that private enterprise should submit specific projects for the land that has been selected and the projects are then evaluated by a commission of experts," he stresses.

"What criteria has been used in the selection of the land if they do not have a project?" Vazquez asks. "The land that has been selected is susceptible to flooding, it is to be found in densely populated areas, and it covers subterranean water tables from where water for human consumption is obtained. So, this talk of the danger of installing the plants in those places, in addition to the risk of transporting toxic waste through urban regions."

In addition to now having to fight against the court decision that annulled the competition of projects, the secretariat will now have to face the reticence of the Buenos Aires Province environmental authorities, who are protesting the invasion of their jurisdiction. The Buenos Aires Province Senate will debate on Thursday the draft being promoted by the Radical bloc that contains alerts to the "certain risks of poisoning to which the population will be put and the serious impact on the environment."

BOLIVIA

Environmental Protection Agreement Signed With Switzerland

PY2408221994 La Paz LA RAZON in Spanish
12 Aug 94 p B2

[Text] The government of the Swiss Confederation will contribute 3.1 million Swiss francs (the equivalent of \$2.3

million) for the implementation of the Program for Joint Protection of the Environment in the Small Mining Sector [Programa de Manejo Integrado del Medio Ambiente en la Pequeña Minería], as established by the agreement signed yesterday by Foreign Minister Antonio Aranibar and Swiss Charge d'Affaires Max Inhelder. The agreement, signed at the Foreign Ministry, falls within the framework of a technical and scientific cooperation agreement signed by the two countries on 30 November 1973.

The program seeks to reduce the pollution level, especially the pollution caused by the mining industry, with the implementation of an environmental protection policy through various national enterprises.

The first phase of the plan will be implemented between 1994 and 1997. This phase will consist of the implementation of measures to preserve the environment in the mining field through nongovernmental and other institutions.

CHILE

Foreign Minister Says Government 'Firmly Committed' to Defending Environment

PY1208221094 Santiago *ESTRATEGIA* in Spanish 4 Aug 94 p 9

[Excerpt] Analyzing the possibility of commercial negotiations with the United States, Chilean Foreign Minister Carlos Figueroa said the government "will not yield to those who want inadmissible environmental or labor clauses in agreements of this kind."

The foreign minister lectured yesterday afternoon to the Chilean Council for International Relations on the country's instatement in the world.

Referring to NAFTA, Figueroa said the government is firmly committed to the defense of the environment. He said: "For the first time in our history we are establishing a long-term environmental policy." He added that the country can rest assured that the government will negotiate with great prudence and will not yield to environmentalist or labor pressures.

He said: "Our great advantage is that NAFTA does not represent a vital issue for our economy. The advantages are great, but a delay in negotiation will not slow our economic growth nor change the macroeconomic stability we are already enjoying."

Figueroa said "it is clear" that negotiations of that type will prompt some problems but added that "the government will firmly include in the negotiations all mechanisms to reduce negative effects and will allow a gradual adjustment of those sectors most vulnerable to the new conditions generated by NAFTA. We hope for a gradual and painless transition process." [passage omitted]

Ecologists Give NAFTA Negative Evaluation

PY2308192294 Santiago *LA TERCERA DE LA HORA* in Spanish 13 Aug 94 Economic Section p 2

[Text] Leaders of different national ecological organizations, headed by Manuel Baquedano and Coral Pey, yesterday handed Finance Minister Eduardo Aninat a negative evaluation of the ecological and social impact of NAFTA in Mexico, the United States, and Canada just six months after its implementation.

The evaluation was prepared by representatives of labor, environment, and human and civil right organizations. The report says negative effects on employment, low salaries, and the overexploitation of natural resources were caused by NAFTA.

The issue was also discussed in the International Meeting For a Continental Social Agenda in Mexico on 22 and 23 July.

The leaders said a declaration of the Action Network for an Initiative of the People was signed by several countries. It expresses concern for countries that will probably sign the treaty—especially Chile because "NAFTA was negotiated by governments, without the involvement of other organizations. It has violated social, labor, and environmental rights."

Baquedano said later that Minister Aninat asserted that the government will not sign any agreement but will protect the overall interests of the nation.

Plan To Preserve Ozone Layer Outlined

PY1108231894 Santiago *EL MERCURIO* in Spanish 21 Jul 94 p C8

[Article by Lilian Duery A. from the "Environment and Development" column]

[Text] Compared to developed countries, Chile consumes a small amount (less than 0.3 kg per person) of substances that damage the ozone layer [sustancias destructoras de la capa de ozono, ODS] in the upper atmosphere. Like other similar countries, Chile has 10 years to fulfill the requirements established by the Montreal Protocol (1987). According to this same international treaty, however, production of these substances will end in 1996 and the national enterprises that import them will have to retool.

Thus pressure is being applied from abroad against Chile, one of the 122 countries that signed the Montreal Protocol to regulate the production, consumption, and trading of substances that damage the ozone layer that protects the Earth and its inhabitants from ultra violet rays. The two amendments to this treaty—one in London in 1990 and one in Copenhagen in 1992—identifies 88 ODS and a detailed schedule for their elimination.

Production of the wide range of chlorofluorocarbons (CFC's), halogens, carbon tetrachloride, and methyl chloroform will cease in 1996. For other related elements, including HCFC's [hydrochlorofluorocarbons], which are considered unstable elements [sustancias de transición]

and less harmful to the ozone layer, the deadline is more flexible. Production of these ODS will cease in 2030.

In view of this worldwide problem, the National Environmental and Development Committee (Conama) has submitted to the Montreal Protocol the program entitled "Country for the Preservation of the Ozone Layer" [Pais para la Proteccion de la Capa de Ozono], that was approved and signed in late 1993. A total of \$1.2 million have been granted for this program by the Montreal Protocol Multilateral Fund. The money was provided by wealthy countries as a contribution to the technological changes the industries of developing countries will have to make.

Conama Engineer Javier Leiva, who is coordinating this program, disclosed that "the basic objective is to reduce the use in Chile of ODS by approximately 60 percent in the next three years." Restrictions will be exercised on CFC and halogens, which represent 90 percent of the ODS used in Chile (with the exception of methyl bromide). The refrigeration industry, foam rubber factories (for mattresses, vehicle seats, containers, etc.), air conditioning equipment, aerosol (spray products and inhalers), sterilizing equipment for hospitals and fire extinguishers will be the most affected.

The program is divided into four specific actions, each of which has been subjected to bids and evaluations by Conama. The first is a massive publicity campaign to make people aware of the risks this problem entails to their health and to teach people to consume ODS-free products.

The next phase complements the previous one and they will both be implemented next year. This second phase entails the use for the first time of the official ozone certificate in the country. Every one or two years enterprises will voluntarily decide whether or not to apply for the certificate. There will be technical organization to certify that products do not contain any of the aforementioned substances and that they have not been used at any stage of their production.

Javier Leiva said: "The mechanism we propose will be very strict because the presence of these substances will be constantly monitored and the industries that are granted the certificate will be directly supervised." When asked whether these measures will increase the price of products, Leiva said that it is hoped they will not due to a greater consumption of these goods, but the enterprises will have to absorb the costs of obtaining the certificate that they do not use any ODS.

The ecological certificate was selected at a nationwide contest in which 240 proposals participated. It refers to the preservation of the planet with a drawing of two leaves and the earth. It has the following inscription: "Friend of the Earth."

Chile is the second L.A. country to use this certificate. Uruguay was the first but only after certifying the product was free of ODS.

The third phase of the program involves financial incentives to retool Chilean industry. To select the programs, Conama will consider those which require a small investment and will entail a drastic reduction of ODS. The program also includes subsidies to recycle substances, especially for the maintenance of other units. For example, in the case of refrigerators, they will operate for at least another 10 years. The idea is to use the gas from old refrigerators to repair other refrigerators until this type of appliance disappears completely.

To ensure these maintenance processes are more effective (avoiding gas leaks), training courses (the fourth phase) will be organized for those involved in this technical service and for those who operate the new technology.

Leiva commented that the Chilean program, although modest, is outstanding for its independence in handling its portion of the Multilateral Fund, thus avoiding the red tape that countries which began before Chile have had to cope with.

Last year, total consumption of ODS in Chile amounted to 1,484 metric tons. The most important are CFC with 864 metric tons and methyl bromide with 283 metric tons. Methyl bromide is not included in the Conama program because no decision has been taken about it by the Montreal Protocol.

Leiva said that although it is on the list of restricted substances, all that has been decided so far was to freeze methyl bromide production in 1992. He added, however, that it is quite likely that next year it will be included on the list for gradual elimination.

This would have great consequences for Chile and other countries that use methyl bromide as an effective spray for fruit exports. The problem is that there is no single substitute for it. There are a few products that eliminate some microorganisms. The solution will probably entail huge investments.

ECUADOR

Forest Resources, Deforestation Reviewed

Wood Industry Summarized

94WN0358A Quito *EL COMERCIO* in Spanish
25 Jun 94 p A-16

[Text] The industry generates 100,000 direct jobs and 250 indirect ones. The deforestation fluctuates between 150,000 and 200,000 hectares per year.

Ecuador's wood industry sells 30 percent of its production on the international market, including agglomerate boards, furniture, moldings, and components for construction. The rest is consumed by the local market.

The Ministry of Agriculture and Livestock's (MAG) Agrarian Sector Reorganization Program spokesmen claim that the average annual growth in the sector's exports since 1988 has been six percent.

According to the Association of Wood Industrialists (Aima), this development was curtailed by the state's lack of a consistent policy for promoting the industry.

The wood producers expect the common external tariff (AEC) to materialize, as well as the opening of other markets, and a reduction in the tariff paid for imported capital goods from 10 to 5 percent.

The results in the case of forests are obvious: During 1992, wood business owners invested \$5 million, compared with income from exports totaling \$35.529 million, according to Jose Franco, the Aima director.

The bulk of the wood exports lies in the agglomerate boards and plywood categories, followed by balsa wood, as a new item in this industry. According to the Central Bank, its sales during 1993 rose 80 percent over the total for the previous year.

Aima believes that the furniture and parts sector has prospects for becoming a scale exporter, after the reconversion period that it is undergoing.

Of the total percentage of boards exported, 40 percent are intended for international trade, and the rest for domestic consumption.

There are in Ecuador 694 companies engaged in furniture manufacture, 566 in the sawmill industry, 13 in paper goods, six in plywood, and two in agglomerates, and the remainder is completed by the 2,500 firms operating in this sector.

The wood industry absorbs 100,000 direct jobs and 250,000 indirect ones.

Nevertheless, not everything is rosy.

Whereas the wood producers consume 2.5 million cubic meters of wood per year, a study by the International Tropical Woods Organization (Itto) reveals that 9.5 million cubic meters of woods are felled in the country annually.

A total of 72 percent of the wood obtained from felled woods in Ecuador is used in the construction industry (a million cubic meters per year). The rest is used for firewood, or rots on the site.

Reforestation Problems

94WN0358B Quito EL COMERCIO in Spanish
25 Jun 94 p A-16

[Text] To control deforestation, the Ecuadorian Forest Institute for Natural Areas and Wildlife (Inefan) is promoting a national plan, contributing up to 75 percent of the total cost of the planting in any part of the country.

The annual deforestation in Ecuador affects approximately 200,000 hectares, and reforestation has covered only 66,000 hectares per year for the past 10 years, as revealed by a study made by the private consulting firm Multiplica.

Aima claims that 50,000 hectares are being reforested annually.

According to Aima studies, the country has 3.2 million hectares of accessible forests, and 5 million of inaccessible forests, on a total area of 27 million hectares, 42.63 percent of which are covered by woods.

The board industry uses 150,000 cubic meters of wood per year, representing a consumption of from 8,000 to 10,000 hectares of woods: that is, five percent of the total deforestation.

Deforestation Condemned

94WN0358D Quito EL COMERCIO in Spanish
25 Jun 94 p A-16

[Text] The wood industry is facing harsh criticism from Ecuadorian ecological groups.

The indiscriminate felling of woods, particularly that in the wet tropical forest, is being scored, because it is taking place without regard for the damage caused to nature by the disappearance of native species.

On the other hand, Aima [Association of Wood Industrialists] claims to be reforesting 150,000 hectares per year, and has announced the implementation of a "Forest Cultivation Program."

This undertaking is aimed at improving forest management and reforestation in the country, a task that it will share with San Francisco de Quito University.

Statistics from the Agriculture Ministry reveal that 97 percent of the wood industry's production comes from native Amazon Region forests, and only three percent from the forests planted in the country.

The largest native forests are located in Zamora-Chinipe and Morona-Santiago Provinces, and part of Napo Province, in the east, and in Esmeraldas on the coast.

The Agriculture-Livestock Sector Reorganization Program defines the sources of wood for the industries and countries for which it is destined:

Silviculture: consisting of balsa wood and cane, exported to the United States and Europe.

Between 1988 and 1992, it accounted for 42.8 percent of the total for the sector.

Semiprocessed: including plywood, lathed, and agglomerate boards.

They are exported to the Andean countries, the United States, Europe, and Japan. With a high national value added rate, they represented 45.1 percent of the total for the wood sector during the five-year period 1988-92.

Processed: consisting of moldings, frames, doors, furniture (parts and pieces), and parquet.

During the period analyzed, they represented 12.1 percent of the total for the sector.

The Forests in Ecuador (in hectares)

Natural forests	11.5 million
Agriculture and livestock raising	7.7 million
Salt marshes	19,000
Shrimping grounds	93,000
Forest plantations	78,000
Land with forest potential	2,587,000
Other uses	5,096,000
Protective forests	3.3 million
Productive forests	8.2 million
Accessible forests	3.2 million
Inaccessible forests	5 million

Source: Association of Wood Industrialists, Aima.

Mangrove Forests At Risk

94WN0358E Quito *EL COMERCIO* in Spanish
10 Jul 94 p A-1

[Text] The mangrove thicket, which still covers the Esmeraldas coast, is at serious risk of disappearing, dying.

The Taura syndrome, affecting the shrimping grounds in the southern part of the country, has made the northern section of the aforementioned province an ideal site for transferring the crustacean's breeding pools.

Several agencies claim that the shrimping industry is the one mainly responsible for the destruction of the mangrove forests on Ecuador's coast.

A report from the Center for Integrated Surveys of Natural Resources by Remote Sensors (Clirsén) indicates that, in 1987, the mangrove forests covered 173,962 hectares. The salt marsh areas covered 12,279 hectares, and the shrimping ground pools, 115,230.

Until approximately 1979, the salt marsh areas had been used for the construction of pools, but they soon became insufficient when faced with a frenetic shrimping industry.

Since then, the country has observed (as a witness, not as a leading player) a dramatic card game: mangrove forests versus shrimping grounds. It has been given an incentive by regulations on the breeding and cultivation of bio-aquatic species, prohibiting the use of soils with agricultural potential for such purposes.

Every year, the outlook for the mangrove forests is changing, along with the statistics. The green savannas are growing smaller in the same proportion that the pools are expanding.

There are various government agencies and laws in the country intended to protect the mangrove forests. However, the dispersion, inconsistency, and lack of coordination are clearing the path for their death.

INDIA

Minister Says Environmental Protection Lectures 'Not Acceptable'

BK1208141194 Delhi THE ECONOMIC TIMES
in English 7 Aug 94 p 4

[Text] Madras—The union commerce minister, Mr Pranab Mukherjee, has asserted that any attempt by developed countries to introduce issues like labour rights and environment degradation in international trade was unacceptable to India and the country would resist such moves.

The objective of the prolonged Uruguay Round, which resulted in the signing of GATT, was to remove non-tariff barriers to accelerate international trade and to open the markets of the industrialised world to the developing countries.

Some countries now attempted to bring issues such as international labour standard and ecologically-friendly products into the realm of international trade. This was tantamount to introducing new forms of non-tariff barriers which was not acceptable to India, Mr Mukherjee said while inaugurating the platinum jubilee celebrations of the All India Skin and Hides Tanners Association here.

Without mentioning any nation by name, Mr Mukherjee said some countries which had caused global environmental damage in the past were now "lecturing to us" on protecting the environment. "This is not acceptable. India is committed to the Rio declaration on protecting the environment but the World Trade Organisation (WTO) is not the forum to discuss issues such as environment and labour practices (relating to international trade)," he said. These issues could be discussed at appropriate forums, he added.

His observations which were not a part of his prepared speech, came in response to leather industrialist and immediate past president of the Council for Leather Exports (CLE), Mr M M Hashim's observation that some countries were now branding their leather products non-eco-friendly and the industry wanted to know the rules of the game.

Mr Mukherjee recalled that apart from bans or restrictions imposed by some developed countries on the use of harmful chemicals, stringent packaging requirements were promulgated essentially based on the principle that the polluter should pay for the environment damage. Some other countries had gone even further and were talking in terms of eco-friendly label for leather and leather products.

While the restrictions on the use of chemicals could be explained away on the ground of health hazards to the consuming country and the controls of packaging could similarly be understood in terms of control of the environment in the importing country, there were some measures which clearly overstepped the legitimate concerns of the importing country and should be regarded as those primarily involving the interests of the producing countries.

Commentary Views Outcome of Regional Environmental Meeting

BK2408061894 Delhi All India Radio Network
in English 0245 GMT 24 Aug 94

[Commentary by G.C. Bhaskaran]

[Text] The two-day consultations among the SAARC [South Asian Association for Regional Cooperation], ASEAN, and other regional countries have expressed the collective will of the people of the region and humanity at large to preserve what is left of much-ravaged nature for posterity. A declaration adopted at the Bangalore meeting, which concluded yesterday, recognized that economic and social development and poverty removal are the first and overriding priorities of developing countries. It also stressed the intrinsic worth and right to existence and the evolutionary development of each species irrespective of its value to humans. This is in conformity with the Indian ethos of Vasudhaiva Kutumbhakam [the world is like a family], where all beings are treated as creations of God and thus respected.

An important highlight of the declaration is its willingness to explore the possibility of the setting up of an Asian regional fund for conservation and sustainable use of the components of biological diversity. The Bangalore Declaration calls upon national governments to frame common guidelines on intellectual property rights related to genetic materials and biotechnology. It stressed the need for a policy related to the rights of farmers and indigenous and local communities.

The Bangalore meeting—organized by the Ministry of Environment and Forests and the United Nations Environment Program—was attended by representatives of Afghanistan, Bangladesh, Bhutan, India, Japan, Malaysia, Myanmar [Burma], the Philippines, Thailand, and Vietnam and experts from international organizations. This is a follow-on of the United Nations Earth Summit at Rio de Janeiro held in June in 1992.

It is interesting to note that seven of the world's top 25 biologically richer countries are in Asia. A regional meeting at Bangalore is thus a step in the right direction for a common approach to strike a mean between the ever-increasing needs of technological advancement and the rapid depletion of the earth's resources. The (consent) paper on the Bangalore consultations put the dilemma briefly by saying that the present should not be allowed to be an enemy of the future. The task of reconciliation cannot be discharged by any single country. Regional cooperation and global responsibilities need to be formulated and given an institutional mechanism.

Groups Lobbying Country To Prevent 'Selective Deployment' of Global Ozone Fund

94WN0382A Bombay THE TIMES OF INDIA
in English 18 Jul 94 p 7

[Article: "Call To Help Curb Ozone Fund Misuse"]

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[Text] New Delhi, July 17:—Top environmental groups have sought India's help to prevent what they allege is selective deployment of the global ozone fund to further the commercial interests of industrialised countries.

India, representing Asia, is part of a six-member panel set up to review funding policies for the ozone fund which was established to help the developing countries phase out ozone-depleting chemicals.

But leading Indian and foreign environmental groups say companies in industrialised countries are profiting from the ozone fund by offering substitutes for the ozone-depleting chemicals to the developing countries.

The Centre for Science and Environment (CSE) here has asked India to use its place on the funding review panel to alter policies so that fund is also used for indigenous research and development of substitute chemicals.

Greenpeace and Friends of the Earth have joined CSE in opposing the existing policies of the ozone fund.

"The review expected to be completed by early 1995 is India's best opportunity to challenge an economically unfair system of technology transfer," said Mr Rav Sharma, associate director of the CSE.

RUSSIA

President, Premier Told Nuclear Power Sector Has Reached 'Dangerous Level'*MK2408091694 Moscow SEGODNYA in Russian
24 Aug 94 p 2*

[Report by Andrey Nikolayev under the "Peaceful Atom" rubric: "Minister and Trade Union Warn President: AES's Have Reached a 'Dangerous Level.' Atomic Stations Pay Their Last Money to Tax Services"]

[Excerpts] Viktor Mikhaylov, Russian Federation atomic energy minister, and Vladimir Startsev, chairman of the Trade Union of Atomic Engineering and Industry Workers Central Committee, together with the heads of Russia's AES's [atomic electric power stations] have forwarded an appeal to the president of Russia and the prime minister where they have stated that the viability of the stations, the nuclear-fuel complex, and the research and support organizations has sunk to a "dangerous level," and resulted in a sharp growth of social tensions in these collectives.

The appeal points out that owing to "chronic non-payments," the stations at the present time can with difficulty prepare for the "fall-winter maximum" and for enhancing AES safety. For example, whereas last year the consumers paid the atomic stations for 60 percent of the electricity generated, they have only paid 30 percent for seven months this year, mutual settlements [vzaimozachety] included. All money credited to AES's is instantly seized by the tax services. Meanwhile the emergency supply of fresh nuclear fuel is already lower than the prescribed norm. As for centralized stocks of equipment and spares, they are virtually not being replenished while wages have not been paid to the AES collectives for five months now. [passages omitted]

The Russian Trade Union of Atomic Engineering and Industry Central Committee actively supports the demands by participants in recent protest actions. At the same time, according to Svetlana Sachkova, the union's press center head, trade union leaders proceed from the fact that the non-payment problem can be resolved at the regional level by for example, creating financial-industrial groups bringing together the suppliers and the consumers. According to Mrs. Sachkova, agreement has already been reached on forming the first such group to be made up of the Novovoronezhskaya, and Kursk AES, as well as the Lebedin, and Staryy Oskol mining and ore-enrichment combines.

Nuclear Safety Chief Notes Concern Over 'Social Tensions'*MK0908065094 Moscow SEGODNYA in Russian
9 Aug 94 p 7*

[Report by Russian Federal Inspectorate for Nuclear and Radiation Safety Press Bureau under the "Safety" rubric: "Nuclear and Radiation Safety Inspectorate is Worried"]

[Text] Yuriy Vishnevskiy, chairman of Russia's Inspectorate for Nuclear and Radiation Safety, has expressed concern, in a press statement, in connection with growing social tensions at Russian nuclear electric power stations over the wages payment delays lasting many months. He noted that the tensions would inevitably affect the personnel's quality of work and have a negative impact on the stations' safety standard.

Apart from this, the protracted lack of finances would prevent the carrying out as scheduled of the modernization of systems and equipment, the stocking up of necessary expendable material and spares, and the implementation of all the necessary maintenance work. All this as a result may affect stable operation of the nuclear electric power stations during the fall and winter period.

The Russian Inspectorate for Nuclear and Radiation Safety is monitoring the observance of safety requirements at nuclear electric power stations and regardless of all the circumstances will be taking the necessary measures including the shutdown of generators if a real threat develops to the population and the environment.

Underground Radioactive Waste Storage in North 'Not Excluded'*LD2308214994 Moscow ITAR-TASS in English
2014 GMT 23 Aug 94*

[Article by ITAR-TASS correspondent Veronika Romanenkova]

[Text] Moscow August 24 TASS—It is not excluded Russia will build an underground radioactive waste storage in its north. The idea has long been discussed by Russian specialists who have had consultations with Norwegians.

At the same time [projections] have not been finalized and its feasibility study has not been submitted to the Russian Ministry for Environmental Protection and Natural Resources for an ecological examination, a source close to the Environmental Ministry heads told ITAR-TASS today.

The storage is necessary to keep the nuclear waste received in the liquidation of nuclear-powered submarines. It is reasonable to have it in highly-frozen ground, and a project variant offers to locate the storage on the Novaya [Zemlya] archipelago.

However, the storage will cost approximately 1,000 billion rubles and it is impossible to allocate this sum from the Russian state budget bearing in mind the grave economic situation.

Toxic Waste Creating Environmental Danger in Tver Oblast*LD1708214294 Moscow ITAR-TASS World Service
in Russian 1246 GMT 17 Aug 94*

[Article by ITAR-TASS correspondent Aleksandr Kharchenko]

[Text] Bologoye, 17 Aug—The Russian Federal Counter-intelligence Service in Tver Oblast is concerned over the

extremely dangerous ecological situation in Bologoye and the town of Kalyazin on the river Volga. An ITAR-TASS correspondent has learned that very toxic substances and petroleum products are being emptied from damaged railway tanker-cars into the marshes on the watershed between the lake of Zmeyskoye and the lake of Bologoye. The toxic substances then seep down to the waterbed and can easily 'reach' the homes of those living in this large railway center, since Bologoye gets its water supply from artesian wells. The cisterns are being diverted to a special siding on the edge of the marshes to be emptied. The surface of the marshes is covered with a film of fuel oil which is causing fires.

The "Molibden" joint-stock company intends to build an antimony trioxide processing facility in Kalyazin. Ecological tests by the Federal Counterintelligence Service have revealed that the toxic emissions produced in the course of processing the above-mentioned compound will include 0.5 percent of arsenic and the subterranean waters will be polluted with heavy metals.

On the basis of the conclusions presented by the Federal Counterintelligence Service the Volga inter-oblast environment protection procuracy has started working on ways to prevent any possible ecological disasters.

Reports of Increased Radiation at Pacific Fleet's Novonezhin Depot Denied

LD0908131694 Moscow INTERFAX in English
1036 GMT 9 Aug 94

[Text] The press center of the Pacific Fleet refuted reports on Tuesday about increased radiation levels near the arms depot in Novonezhin, where a powerful explosion occurred and a fire flared up on May 14 owing to negligence by servicemen.

The press center asserts that daily checks have shown no increase in the natural radiation level.

Word about high radiation levels began to spread after dry wine was included in the servicemen's food ration, which was taken to be an anti-radiation measure.

Dry wine was really included in the food ration as a compensation for the absence of individual food stuffs and juices, according to the press center.

Cancer Rate in Altay Kray Village Blamed on Nuclear Pollution

MM1008135994 Moscow RABOCHAYA TRIBUNA
in Russian 10 Aug 94 p 4

[IASI report under the "Fatherland in Danger" rubric: "From Experiments with Weapons to Experiments on Children?"]

[Text] Novosibirsk Oblast—Mankind is still tormenting itself, trying to guess why the Indians of the Maya tribe abandoned their grand cities and took to the jungle.

The residents of the modest village of Bezmenovo in Altay Kray also would have left, but they are registered there.

Just as the Mayan priests made human sacrifices in the temples of the sun, today human destinies are burning on the altar of the nuclear tests in Semipalatinsk.

Two-thirds of the village's children are dying of cancer, and adults there die of cancer four times more frequently than in the rayon's neighboring settlement.

Of course, there are good people around. They are doing their utmost to help the villagers. The oblast ecology committee has allocated 40 million rubles, and the residents have been screened by the Novosibirsk branch of the Russian Federation State Committee for Sanitary and Epidemiological Supervision's "Gigiyena i Prospatologiya" Science and Production Association. The Russian Academy of Sciences Siberian Branch Institute of Organic Chemistry will soon be tackling the oncopathology problem at a deeper, molecular level. Scientists come and study, however—but who is responsible for everything?

Was it because for 40 years now the soil of Bezmenovo has been subject to nuclear influence or simply out of the goodness of its heart that the command of a neighboring troop unit organized a firework display on the edge of the village in 1989? For two months the sky was constantly illuminated by iridescent flashes—joyfully and openly, for everyone to see, the military was destroying many years' stocks of explosives and shells. The memory of that is preserved even now in the private plots and drinking-water wells poisoned forever by benzopyrene and nitrotoluene.

Barnaul To Host International Conference on Effects of Radiation 5-10 September

MM1008154194 Moscow ROSSIYSKAYA GAZETA
in Russian 10 Aug 94 First Edition p 2

[Report from ITAR-TASS column: "Alarm Signals From Altay"]

[Text] The international "Radtest" (radiation test) conference is to be held in Barnaul from 5 through 10 September in the framework of the state program for the rehabilitation of the population and the socioeconomic development of population centers in Altay Kray which have been subjected to the effects of radiation as a result of tests at the Semipalatinsk site.

Committee chairman and kray administration head Vladimir Germanenko has noted that for several reasons not only are an increasing number of people living on the land being subjected to radioactive contamination, but so are the environment and the flora and fauna around them. This danger exists in the long term too.

Altay, as a result of the impact of more than 58 nuclear explosions on the region, including the first testing of a thermonuclear weapon in August 1953, has reluctantly become a sort of test laboratory. The consequences of this are becoming known only now. Inhabitants of the kray have been subjected not to a single, but to repeated irradiation by radionuclides with a short period of decay. Comprehensive research by scientists in various specialties carried out here have enabled a program for the

rehabilitation of the population to be developed, which includes urgent measures to eliminate the consequences of nuclear tests and improve the ecological conditions and for the socioeconomic development of the region.

Radioactive Cesium Rods Discovered on Samara-Moscow Train

*MM1008104994 Moscow IZVESTIYA in Russian
10 Aug 94 p 1*

[ITAR-TASS report: "Container of Cesium Confiscated from Train Passenger"]

[Text] An inhabitant of Mordovia has been detained on a Samara-Moscow passenger train carrying a container full of radioactive cesium rods. Transport militia personnel used a dosimeter to establish that radiation 2.5 times in excess of the permissible norm was emanating from a bag containing the container weighing around two kg in all. The dangerous freight was immediately confiscated. An investigation is being conducted.

Work of Recent Komsomolets Expedition Detailed

*MM0908142594 Moscow IZVESTIYA in Russian
9 Aug 94 p 4*

[Report by Boris Konovalov, incorporating interview with M.G. Tolokonnikov, chief of the Russian Federation Ministry for Emergency Situations Administration for Work at Sea and in Bodies of Water; place and date of interview not given: "Nuclear Komsomolets Still a Threat to the World's Oceans"]

[Text] An expedition on the scientific research vessel Akademik Mstislav Keldysh, which has been doing research and work on eradicating the radiation threat from the Komsomolets sunken Soviet nuclear submarine will return to St. Petersburg soon.

The sunken Komsomolets contains two dangers—the nuclear power plant and its torpedoes' plutonium warheads. Plutonium is one of the most radiotoxic of elements. One 10,000th of a gram of plutonium entering the body is enough to kill. Unfortunately, plutonium is a long-lived element—with a half-life of 24,000 years. So the danger will be around for a long time, and seawater is a kind of electrolyte—it completes the electrical circuit between the warhead casings and the submarine. Sooner or later, this will lead to their destruction. Consequently, Russia has decided to avert this threat.

M.G. Tolokonnikov, chief of the Russian Federation Ministry for Emergency Situations Administration for Work at Sea and in Bodies of Water, who has been taking part in the expedition, has already returned to Moscow.

Tolokonnikov: Not only Russian specialists, but also representatives of the International Atomic Energy Agency [IAEA], Norway, and the Netherlands took part in the expedition. They had free access to all the results of our detailed research using different methods, and they observed our preventive work. We all saw for ourselves

that radioactive contamination has not yet exceeded background levels. But it is too soon to be getting complacent.

The boat's hull is seriously holed as a result of an explosion or hydraulic pressure and the bow has broken away. The torpedo tube covers are jammed half-open and the torpedo equipment itself has been destroyed. Seawater has flowed in freely through these holes. So far the beryllium casings of the plutonium warheads are intact, but there is still a danger of their rupturing.

The crew of the Russian Academy of Sciences Oceanology Institute's Mir-2 deep-water submersible did meticulous work in a strong current, and closed nine of the holes with titanium seals in order to form a stagnant zone inside the boat. We were working at this great depth for the first time and were satisfied with the results in rendering the most dangerous areas safe.

The expedition carried out extensive biological research to clarify the full extent of the possible threat of radionuclides entering the food chain. Four types of sea creature were detected around the boat—crayfish and krill. They are found throughout the water and serve as food for the fish. If radiation were to escape, it would be a major disaster.

Konovalov: How do you plan to prevent that happening?

Tolokonnikov: Because of the weather conditions we can only work in this area in July-August, consequently the work will be continued next year. During the second stage, the plans for which will now be drawn up, it is planned to cover the boat with soil [grunt] poured through the holes, and to use substances which adsorb radionuclides.

With the help of the deep-water submersible a survey was also done of the escape capsule, where the captain and two crew members were located. We will be trying to raise it next year. Unfortunately, having come to the surface, it then sank rapidly. It is now lying on the bottom, six miles away from the submarine.

Konovalov: Could the Komsomolets be raised from the bottom, removing the nuclear threat once and for all?

Tolokonnikov: Specialists have concluded that it would be best not to touch it. It could disintegrate in the process of being lifted.

Konovalov: The Komsomolets is not the only source of nuclear contamination in the world's oceans. What measures are being taken to render them safe?

Tolokonnikov: No, unfortunately, it is not the only one. Last year we did a major survey of the Kara Sea, where there is also a submarine lying on the bottom and several dumped nuclear reactors. There is as yet no serious threat, but the threat remains. In the Pacific, liquid waste from the reactors in many of our nuclear submarines has been dumped at sea. The British have dumped radioactive waste at sea. The IAEA has now banned this, but the decision is hard to put into effect, because onshore storage facilities are already full. The burial of radioactive waste is a major world problem. It needs to be solved—but it is hard for a Russia in crisis to find the money. We are doing

everything in our power, but it is still just "papering over the cracks" rather than fundamentally solving the problem.

Debate Over Yeltsin-Backed Moscow-St. Petersburg Rail Line Grows

*MK0908091594 Moscow SEGODNYA in Russian
9 Aug 94 p 3*

[Report by Tatyana Shchipanova under the "Ecology" rubric: "Russian Academicians Opposed to Moscow-St. Petersburg Main Rail Line. The Project Is Under Boris Yeltsin's Personal Supervision"]

[Text] The controversy on whether a new high-speed railroad line between Moscow and St. Petersburg should be built is drawing in more and more people. The issue now is not only that this "project of the century" would require enormous funds (12 to 13 trillion rubles). Ecologists, scientists, and specialists are worried that there have been no surveys and ecological expert assessments carried out before construction. Instead there is a presidential edict and the government decree No. 671 describing it as "the country's priority project" and virtually validating going ahead with this venture. The arguments in support of the high-speed rail link are mainly based on the fact that the new line would relieve passenger traffic and "increase it 60 percent." It would only take three hours to reach the northern capital from Moscow. The project's supporters also promise to take maximum account of the interests of the areas the line is going to traverse, and are even prepared to comply with all the conditions the regional authorities are going to set them, including the construction of hotels, roads, and new stations.

Those opposing the version dubbed the "Novgorod version" maintain that the plan is "raw" and in its present shape could do considerable damage to the environment. According to Academician Aleksandr Yakovlev, chairman of the Russian Academy of Sciences scientific council for biosphere problems, "the construction of the new rail line will occupy 300 square kilometers of crop land and forests. The country's crop land resources are already depleted." Valentin Rastorguyev, member of the International Information Science Academy and deputy chairman of the social policy committee, thinks "the territory the line is to traverse is one of the planet's vulnerable, sensitive points. This is not only a great watershed, but it is also a partition between the main political centers of Russia: Novgorod-Suzdal-Moscow-St. Petersburg. To touch it may trigger a global disaster. The reserves of drinking water—the main strategic resource—are formed there." Also unique are the tracts of forest, many hectares of which would have to be cleared. The European Fund for Reconstruction and Development experts think it would be better to build the high-speed rail line after the year 2015, and that it is technically inexpedient today because it is much simpler and cheaper to reconstruct the existing line to allow trains to travel at maximum speed. There is so far no serious feasibility study for the line, the project's opponents think. The project, however, has influential supporters—Mr.

Sobchak, mayor of St. Petersburg, and Mr. Luzhkov, mayor of Moscow. Besides, the project is under President Yeltsin's personal supervision.

Plan to Cut Assistance for Chernobyl Victims Examined

*94WN0376A Moscow KOMSOMOLSKAYA PRAVDA
in Russian 10 Aug 94 p 2*

[Article by A. Khokhlov: "Liquidation of the Liquidators"]

[Text]

The Government of Russia is Preparing to "Decrease" the Number of Radiation Accident Victims by 2.2 Million

Russia has never liked its heroes, or its citizens in general. The conquerors of Napoleon were driven en masse into the noose of serfdom and had Arakcheev-like conditions imposed on them, while Hitler's conquerors were plunged into the utter hopelessness of postwar "regeneration." Afghan veterans found themselves totally unwanted in a country undergoing reconstruction. Right now democratic Russia is preparing to abandon the liquidators of the latest accident in Chernobyl to the mercy of fate.

From Official Notes:

As of 1 April 1994 the register contains the names of 159,319 liquidators living in Russia.

The average radiation exposure of the liquidators amounted to 12 cGr (1 centigray equals 100 bars) while the average length of time spent working in the affected zone was around two months. Most of the liquidators of 1986 and 1987 received a radiation exposure in excess of 5 sieverts (90 and 82 percent of the total number, correspondingly).

Primary attention is attracted by a steady rise in indices reflecting occurrence of malignant tumors from 97.6 (1989) to 180.7 (1992).

A very good law for the social protection of citizens exposed to harmful radiation was passed in May 1991. That legislative act provided for a variety of benefits for people who had suffered from radiation. In Russia there are over 2.6 million such people and they include not only those from Chernobyl. Radiation left many "tracks" in the Urals, Altay Kray, as well as in the Republic of Gornyy Altay. At present, however, in August, the government of Russia is preparing to adopt a decision on the so called "1—5 rem zone." As usual, the initiator was our economical Ministry of Economy. It is planned to deprive of their benefits all those who live on territories with such a radiation level. Some 2.2 million people will be taken off the rosters of "beneficiaries."

The goals of our beloved government, naturally are most kind: it will benefit all of us to stabilize the economy. If we tighten our belts today we shall live better tomorrow. For the sake of economy the Ministry of Finance is already

underpaying the Ministry of Emergency money for fulfillment of all five state programs aimed at elimination of the consequences of radiation catastrophes.

The Ministry of Emergency is doing the best it can. Unfortunately, however, that may not be enough. Programs for the construction of life-support facilities in regions that suffered with radiation are actually being curtailed as there is no money to complete the work. Many benefits remained only on paper. The leadership of the ministry, placed in a tight spot by insufficient and untimely financing, is not economizing on just one thing—the health of the people. In the first six months of 1994 \$3 million were allocated for the medical treatment of the population suffering radiation injuries which constitutes 70 percent of the currency reserves of the ministry. Were it not for that the situation would become catastrophic.

From Official Notes

During the period under study mortality of those who participated in the liquidation of consequences of the accident at Chernobyl Nuclear Power Station from all causes rose from 4.8 in 1990 to 6.9 in 1992 per thousand. A particularly sharp jump in the death rate was recorded in Leningrad Oblast (from 3.1 to 12.0) and in Rostov Oblast (from 1.5 to 6.8). Constantly high mortality rates are noted in the East Siberian Region.

Diseases of the endocrine system, and diseases of the blood, and hemopoietic organs, as well as mental disorders are encountered several times more frequently among the liquidators than in the control groups, and continue at a sufficiently high level.

The greatest number of deaths from malignant tumors are caused by malignant tumors of the digestive (42.2 percent) and respiratory organs (82.8 percent). Death among the liquidators from malignant tumors between 1990 and 1992 increased each year.

The official notes of the Ministry of Emergency reveal that because of the uncertainty about tomorrow, radiophobia, and the victim's own feeling of futility, a great majority of the liquidators are heavy drinkers. The divorce rate among them is extremely high. It turns out that a man is a highly vulnerable creature. Just one failure in bed may damage the psyche. Just multiply that manyfold by the stories seen in the press about "radiation impotence."

Brought to despair Russian Chernobyl victims are engaging in acts of protest with growing frequency. On 28 April of this year, on the eighth bitter anniversary of Chernobyl, 15 people at Vologda declared a hunger strike. After that the local administration assumed the payment of benefits to the liquidators itself. Would all the local authorities in Russia have enough funds for that if, as estimated by the Ministry of Emergency, around 350,000 Russians actually had participated in the liquidation of consequences of the accident at the Chernobyl Nuclear Power Station?

What would happen if 2.2 million people living on Russian territories contaminated within the limits of one—five

rem, should lose their benefits? Specialists from the Ministry of Emergency returned from the Republic of Gornyy Altay. They found that the republic budget is capable of paying people (work stoppages, massive unemployment) just eight percent of the money, with 97 percent being government benefits. Many families actually live exclusively on that rather miserly income.

It is believed the situation is no better in the Bryansk, Kaluga, and Tula oblasts as well as in Altay and the Urals. The next problem will occur in Tuva, where it is suspected radioactive fallout from the accident at the Chelyabinsk Mayak had passed and in the Orenburg region, the site of the famous Totsk training exercises with the use of nuclear weapons.

Ministry of Emergency specialists understand that there will not be enough "candy" for all and that the country will be experiencing some uneasy times. But if a decision is made to "cut" the benefits of people who suffered as a result of radiation catastrophes, most of these innocents will automatically find themselves existing below the subsistence level. The ministry intends appealing to the government with a proposal for a gentle, incremental elimination of benefits for individual categories of citizens. Will that proposal be heard?

There is just no need for talk about the shortage of money and the fact that it is difficult for everyone at present. It is simply that Russia has never liked either its heroes or ordinary citizens and continues disliking them.

How about the money?

Boris Nikolayevich recently did find the money for a combine for a farmer from Krasnoyarsk Kray? I very much doubt that local authorities brought the most impoverished and hungriest peasant to the president.

Also, what about one combine costing a million. In July Viktor Chernomyrdin, prime minister of Russia gave the Chernobyl victims of Belarus a whole two billion rubles. One can only be happy for the Belarusians: despite all the borders and customs offices we still think of ourselves as a single entity. But noble gestures are becoming tiresome. How could it be that the premier does not know that in Russia itself Chernobyl programs are being financed only by 60 percent?

One feels sorry for the Belarusians and the Ukrainians, one feels sorry for all of you who have suffered from a single misfortune. Rems of radiation should not be categorized into our own and those of others. So, citizens of sovereign countries, let us together feel sorry for each other since our leaders do not want us all.

Or is there still hope?

Environmental Degradation Due to Soviet-Era Industry Viewed

94WN0356A Moscow *NOVOYE VREMYA* in Russian
No 28, Jul 94 pp 32-35

[Article by Andrey Bayduzhyy: "A Disaster Lasting More Than a Century...; We Are Unknowingly Living on Top of a Volcano, and Not Even Just One Volcano"]

[Text] There was an accident on the grounds of the equipment warehouse of the ZIL motor vehicle plant in Moscow on 27 May. The seal on one of the ten 50-tonne tanks holding nitric acid broke at 11:31, and the toxic liquid gushed out of the tank, flooding around 200 square meters of land. The rapidly swelling stream—the tank held around two tonnes of liquid—submerged the paint cans stored nearby within a few minutes. The reaction caused by the mixture of the nitric acid and the contents of the cans created a lethal yellow fog above the warehouse. There was a slight breeze, and the cloud, after a brief pause, as if it were wondering which way to go, started moving slowly across the Moscow River to a residential neighborhood. If it had moved just a little farther, no one and nothing could have prevented a disaster. Only the quick actions of firemen saved the day. After neutralizing the nitric puddle with soda and sand, they washed the resulting mixture into the closed sewer lines of the plant. They managed to stop the poisonous cloud and then dispersed it by forming a water umbrella with their fire hoses. This latest accident—categorized by specialists as “routine”—in one of the numerous production units scattered around the center of Moscow ended without any trouble. A subsequent investigation revealed an extremely inconsequential cause: The acid had simply eaten away the lining of one of the tank’s connections. The disintegrated pipe was replaced, and the unfortunate incident was quickly forgotten.

Time of Disasters

According to statistics, however, not all of the industrial accidents and disasters that occur in the vast expanses of Russia almost every day have such a fortuitous outcome. According to the data of the information center of the State Committee on Emergency Situations (recently reorganized as a ministry), there were 769 industrial emergencies, with 2,523 victims, including 870 fatalities, just in 1992. Most of the emergencies were fires, explosions, and major traffic accidents. On the average there are two serious pipeline accidents in Russia each day, one major emergency in the transportation network each week, and one serious industrial accident each month. Major industrial disasters occur once every six months.

The days when each airplane crash or train wreck shocked the whole country and was reported in newspaper headlines are gone forever. The public has crossed the pain threshold and has simply stopped registering the reports of new disasters. The news of the death of the 120 passengers of the TU-154 this January near Irkutsk or the dozens of victims of the recent crash of the A-310 airliner no longer evoked the same response as the reports of the disaster of the ship “Admiral Nakhimov” or the gas tornado that killed the passengers of two trains near Ufa a few years ago, which literally paralyzed the whole country. The genies hiding in the shops of obsolete Russian enterprises and transportation systems that are falling into decay because of a lack of investment capital, however, are stronger than ever. There is every indication that it will not be long

before the quantity of disasters is surpassed by the magnitude of their scales. The regular sequence of major disasters on Russian planes, with their unprecedented numbers of victims, is not the only evidence of this. Incidentally, only China has worse air traffic safety indicators than we do today. The memorable explosion at the chemical combine in Tomsk-7, resulting in the radioactive contamination of more than 100 square kilometers, and the massive fire at the Kama motor vehicle plant, causing billions in damages, which cannot be covered by the combined assets of all of the insurance companies established in recent years, testify that accidents in all branches of production have acquired unprecedented dimensions in Russia and have reached the scales of a national emergency. The effects of these accidents have become our main ecological problem.

Hostages of Technology

The Russian Academy of Sciences estimates that major and minor accidents and disasters of all types have killed around 50,000 people and injured another 250,000 each year in Russia in recent years. It also estimates that the number of victims will rise by about 10-30 percent a year. There is no apparent way of changing the situation for now. Although production figures have dropped by almost 20 percent, the number of industrial accidents increased by 17 percent, for example, just in 1992.

Enterprises of the chemical, metallurgical, oil and gas, and mining complexes are particularly dangerous, in the opinion of experts. There are around 1,500 accidents each year (four a day) just in the chemical industry in connection with leaks of hazardous products, explosions, and fires. The number of major accidents at metallurgical enterprises was twice as high in 1992 as in 1991. The most dangerous elements of the oil and gas industry are the spouters with uncontrollable oil and gas emissions—the cause of extensive environmental pollution. The actual damages caused by such incidents are extremely difficult to assess, because the losses are calculated by the very enterprises that are responsible for the accidents. Their calculations include only the residual value of destroyed equipment, the wages of clean-up crews, and the cost of renting the equipment for clean-up operations. These items, however, are incomparable to the unrecorded losses of oil and gas and the cost of cleaning up polluted regions.

Another extremely disturbing ecological and economic problem is connected with the common practice of exploiting oil deposits without the use of systems to trap casing-head gas. In 1992, for example, 8.2 billion cubic meters of gas were burned, mainly in Tyumen Oblast. The products of the burning gas caused colossal environmental damage, on a scale described as global by environmental experts. At a time of economic crisis, however, there is not much concern about environmental problems, and the oil and gas complex is one of the few profitable branches of the Russian economy. This is probably why the government passed another decree on 7 March last year to authorize the start of work on another 120 deposits without these systems in 1993-1995.

The high accident rate in Russian air and motor transport is already a national disgrace. The latest disasters in the Russian skies and the tragic accident in Moscow on the Dmitrovskiy Highway, where 11 people burned to death in the flames of an overturned gasoline truck, are good examples of this. Railway and pipeline transport, however, is no safer in our fatherland. According to the Russian "White Paper" on ecology, there were 49 incidents categorized as major accidents in the facilities of just the gas utilities in 1992—more recent data are not available yet. There is nothing surprising about this. The total length of all the oil and gas pipelines in Russia is 550,000 kilometers—enough to circle the equator almost 14 times. Around 10 percent of the pipelines have been in operation for more than 35 years, but installations of this kind are considered unreliable after a service life even 10 years shorter than this. It is therefore understandable that pipeline ruptures no longer number in the hundreds or even the thousands, but in tens of thousands: 28,000 such incidents were reported in 1991. As a result, large regions are polluted by oil and gas products, and the country loses colossal quantities of fuel. Last year around 150,000 tonnes of oil "leaked" out of holes in pipelines. If all of the oil lost in this way were in one place, it would form a vast sea of fuel.

What Does the Reactor Have in Common with the Refrigerator?

Specialists estimate that Russia now has around 800 nuclear and 1,500 "conventional" installations and production units in the high-risk category. In view of the fact that an accident at any one of these could have catastrophic effects, with colossal numbers of victims, almost the whole territory of the country could be called a high-risk zone. In such cities as Kemerovo, Ufa, Sterlitamak, and Dzerzhinsk, where the large facilities of the chemical industry are located, the amount of highly toxic products located simultaneously in production areas can be as high as 100 billion times the lethal dose, and the energy yield of explosive substances on one hectare is equivalent to 30 kilotonnes of trotyl. It is not difficult to imagine the implications of even a minor incident in facilities of this kind. In Dzerzhinsk, for example, if just one of the chlorine tanks were to spring a leak, the polluted air would cover an area of thousands of square kilometers, inhabited by more than 280,000 people.

The population of Russia's biggest cities, especially Moscow, is extremely vulnerable to industrial accidents. The concentration of potentially dangerous production units in Russia's capital exceeded all permissible limits long ago. The city has nine nuclear reactors, most of which are on the grounds of the Scientific Research Institute of Theoretical and Experimental Physics in Sevastopolskiy Rayon and the Atomic Energy Institute imeni Kurchatov and the Scientific Research Institute of Electrical Engineering in Sokolnicheskiy Rayon. Besides this, there are another five reactors in direct proximity to the capital: four in Khimki and one in Lytkarino. To be fair, however,

we have to admit that all of the reactors are being monitored not only by experts from the Russian Federal Oversight of Nuclear and Radiation Safety, but also the IAEA, and they are not the main threat to the city. Oddly enough, waste treatment plants and refrigeration combines are at the top of the list of the 66 most dangerous installations in Moscow, compiled by the municipal office of civil defense and emergency situations. Each day the four waste treatment plants in Moscow use 50 tonnes of liquid chlorine. Their uninterrupted operation necessitates the transport and storage of tremendous quantities of this toxic substance—enough to kill the whole population of Moscow several times over. According to the personnel of the municipal office, no city in the world has accumulated as much chlorine for waste treatment as our capital. Incidentally, this is not the result of malicious intent or negligence. This constant threat to the lives of the nine million Muscovites could be avoided by using harmless chlorine dioxide to treat the waste, as the majority of developed countries have been doing for a long time, but it is quite expensive to produce, and the city simply cannot afford this "luxury."

As far as the refrigeration combines are concerned, they—just as, incidentally, the produce warehouses, breweries, candy factories, and many other enterprises of the food industry—use ammonia as a cooling agent, and this is extremely dangerous to the life and health of the Muscovites. Furthermore, the ammonia units in many of these facilities outlived their service life long ago, and some of the compressors have been operating since before the war.

And that is not all. All nine of Moscow's railroad stations are high-risk zones. Around 2,600 trains, often carrying hazardous freight, pass through them each day. In view of the fact that the number of railway accidents increased 2.5-fold just in 1992 in Russia, and the number of leaks of petroleum products, hydrocarbon fractions, and other chemical substances passed the 800 figure, we can understand the inevitability, according to the theory of probability, of a certain number of incidents of this kind in the capital. In 1993 there were four reported emergencies in Moscow involving hazardous freight. The main one was in Perovo Station, where 54 tonnes of methylstyrene poured out of a tank car. The contaminated earth that had to be taken out of the city filled around 20 flatcars.

Lifesaving Efforts...

During a discussion of the situation in the capital at a meeting of the RF President's Council on Ecological Policy back in summer 1993 on the problem of industrial emergencies, experts noted that mass disturbances or military operations constituted the biggest threat to the capital. If these should break out, the city would soon be a ghost town. The experts' warnings almost came true in October that same year, when military operations were launched in the very center of the capital. Moscow was literally on the verge of death at that time, and the number of victims could have been much higher if the reckless armed individuals on the streets of Moscow on the morning of 5

October had gone to one of the city's utilities, for example, instead of the newspaper office.

Incidentally, it would not necessarily require military operations or terrorist acts for boilers to burst and the city to burn. The worn-out equipment, the decline of labor discipline, the disruption of technological cycles due to the economic crisis and the severance of ties with suppliers of raw materials and equipment—each of these factors has contributed to the unprecedented rise in the accident rate in recent years. We have to give Moscow Mayor Yuriy Luzhkov and his government credit for their quick acknowledgement that the situation required outside intervention. At the end of 1993 the mayor's commission managed to institute strict control over the use of ammonia at most of Moscow's refrigeration combines and other food enterprises with the aid of heavy fines and severe administrative penalties. Guards were posted in hazardous facilities. These emergency measures were supplemented this May with the special "Moscow Security Program." A total of 2.6 billion rubles was allocated for the program, and the program's scientific and technical council was headed by First Deputy Mayor Boris Nikol'skiy. The program envisages several measures to heighten the safety of the Muscovites: the use of new cooling agents, the closure of several hazardous production units, the licensing of hazardous freight carriers, and the establishment of a single control system for all of the capital's emergency services.

Living on Top of a Volcano

The actions of the Moscow Government could have been an example for other parts of Russia, but not all of them can make use of this experience—mainly because safety costs money, and quite a bit of money, and most of the federation members are already having trouble making ends meet. In general, experts have called the present situation in Russia absolutely unprecedented. On the one hand, there are so many large production units posing a potential threat to the population and the environment, and on the other there is the rapid decline of technological standards, control, and discipline—all of which have dropped almost to the critical point. The economic crisis only compounded the problem, and environmental issues have now been added to the other safety concerns. Russia is also in a unique position in this area. Whereas negative environmental processes in the developing countries—desertification or clear-cutting, for example—are the result of poverty and the inability to resist barbarous methods of economic management, and whereas the pressure on nature in the industrial states, with their abundance of industrial installations, is so great that even the allocation of huge sums for environmental protection cannot stop the deterioration of the environment, the features of both are combined in Russia. Former Prime Minister Margaret Thatcher of Great Britain, who once called the Soviet Union an Upper Volta with missiles, was mistaken: In addition to the missiles, she should have mentioned the nuclear power plants, nuclear fleet, colossal chemical

industry, and hundreds of other facilities where any accident, as Chernobyl demonstrated, could jeopardize not only the territory of the ex-USSR, but also the rest of the world.

Safety as an Economic Category

How soon can Russia and the countries of the nearby foreign zone lower the rising accident rate? The answer to this question will depend largely on how long it takes their economies to emerge from the protracted crisis. Even with the most opportune course of events, the end of the century is almost certain to be a time of disasters in Russia. Experts estimate, for example, that the next two or three years will be marked by a dramatic rise in the rate of accidents on gas pipelines, especially in West Siberia. This also applies to several other branches of the economy. The main factor justifying such dismal predictions is the extremely dilapidated condition of the equipment at precisely those enterprises where accidents would cause the most damage. Around 75 percent of the equipment in facilities of the chemical and oil refining complexes has been in use for more than 20 years, and around 60 percent of the equipment in heat and electric power plants and metallurgical enterprises has outlived its service life and does not even meet minimum safety requirements. There are also some unique situations: Russia still has 90 petroleum bulk plants which were built before...1917, and the boilers of the Kemerovo State Regional Electric Power Station and Kuznetsk Thermal Power Plant have been in operation for more than 50 years. In addition to the worn-out industrial base, there is the absence of the necessary accident prevention standards.

No one can say that the government agencies responsible for policy in the sphere of industrial safety did not do their job. A whole package of laws was drafted and submitted to the government and parliament for the reduction of accidents and disasters in industry and during the transport and handling of hazardous freight. If legislative instruments of this kind were already in force, many tragedies could have been averted, but even if all of the bills are passed quickly (which is highly improbable), it will take another year, according to experts, to replace the administrative methods of monitoring industrial safety with primarily economic methods. Russia is already spending one-two percent of its gross product on clean-up operations following various types of industrial accidents each year. In the future, the figure probably will rise to four-five percent, which would exceed our combined expenditures on public health and environmental protection. This means just one thing: For a long time, every Russian will unknowingly be living on top of a volcano that could wake up at any time.

State Report Finds Drinking Water Problem To Be 'Increasingly Critical'

94WN0372A Moscow NEZAVISIMAYA GAZETA
in Russian 2 Aug 94 p 1

[Article by Yelena Shapetkina: "Drinking Water Situation in Russia Is Very Bad: This is Stated in First Special Report to the Country's Government"]

[Text] The Ministry of Environmental Protection and Natural Resources has presented for the Russian government's consideration a state report titled "Drinking Water," which was prepared jointly with the RF State Committee for Sanitary-Epidemiological Oversight and a number of other departments. According to this document, the problem of providing the population with drinking water is becoming increasingly critical in some regions of Russia, despite the fact that the country's drinking water reserves are among the richest in the world. Every inhabitant of Russia consumes more than 30,000 cubic meters of water per year for. However, for nearly half of Russia's inhabitants the quality of the water does not meet stand standards. Consequently, one in every three Russians suffers gastrointestinal ailments every year.

The fact that the anthropogenic burden on Russia's bodies of water has risen sharply in the past 10-15 years has resulted in their degradation. In 70 percent of the country's rivers and lakes, water quality is such that they have lost their capacity to serve as sources of drinking water. And the water in such bodies of water that is still fit to be used for such purposes often fails to meet health requirements in terms of its chemical and microbiological properties.

One can identify four degrees of chemical pollution of the water that is supplied to Russia's cities. A periodic rise in the level of chemical pollution to the "moderate" level is characteristic of bodies of water in Moscow's Volga system and the systems that supply the cities of Mezhdurechensk, Tver, Rubtsovsk, Omsk, Irkutsk and Samara. Constant "moderate" pollution is characteristic of Moscow's Moscow River system and the systems of Novosibirsk, Divnogorsk, Lesosibirsk, Murmansk, Yekaterinburg, Chelyabinsk and Rostov. "High" and "extremely high" levels are periodically recorded in Nizhny Tagil, Tyumen, Petrozavodsk, Kurgan, Arkhangelsk, Kemerovo and Cherepovets. The substances and properties that are most frequently found in excess of regulated amounts in drinking water are: iron (up to 80 percent), chromaticity (47 percent), turbidity (40 percent), phenols (32 percent), manganese (29 percent), petroleum products (eight-11 percent) and formaldehyde (five percent).

The daily consumption of drinking water that violates health standards in terms of its chemical makeup results in the development of various diseases. Thus, excessive concentrations of copper cause damage to the mucous membranes of the kidney and liver; high concentrations of nickel cause damage to the skin; and high concentrations of lead and manganese damage the central nervous system. The failure of water to meet microbiological standards has resulted in annual increases in the number of epidemic-scale outbreaks of acute infectious intestinal diseases. Nine such outbreaks were recorded in 1991, 16 were recorded in 1992, and 21 were recorded in 1993.

The document makes it clear that very high levels of viral and bacterial contamination are characteristic of Tyumen Oblast (39.4 percent of all samples studied), Chelyabinsk Oblast (31.3 Percent), Yekaterinburg Oblast (33.8 percent), Kurgan Oblast (33.8 percent), Udmurtia (27.8 percent) and Khabarovsk Kray (14.6 percent).

On the basis of the analysis of the existing situation with respect to the supply of drinking water, the report defines strategic lines of action for solving the problem on the territory of the Russian Federation, the top priority among which is assigned to: the establishment of health-protection zones and the observance of regulations governing economic activity in those zones; the reconstruction and technical reequipment of water mains and sewage systems; the improvement of the normative and legal base.

Fifth Komsomolets Expedition Finds No Signs of Radiological Disaster

94WN0352A Moscow NEZAVISIMAYA GAZETA
in Russian 19 Jul 94 pp 1, 2

[Article by Vladimir Svartsevich under the heading "Eyewitness": "The Latest Expedition to the Wreck of the Nuclear Submarine 'Komsomolets': Hydronauts Working Under Difficult Conditions for Little Pay"]

[Text] Five years ago, on 7 April 1989, the "Komsomolets," the deepest-running submarine in the world (officially tested to a depth of 1,000 meters), sank in the Norwegian Sea as the result of a fire in a nuclear compartment. Forty-two of its 67-member crew perished.

Dozens of stories about the sinking of this submarine continue to circulate. But there is no absolutely certain version. The highest-ranking offices of the Russian Navy keep their secrets securely locked away. Four expeditions dispatched to the wreck site have not succeeded in clearing up the situation.

There is one story that claims that during the fire on board the submarine all ships—both ours and those of other countries—were ordered to leave the "secret quadrant." Up until the last minute the commanders of the Northern Fleet could not believe that the submarine was lost. And only the curses of a pilot who watched the boat sink into the ocean depths were sufficient to convince naval officials that a disaster had indeed occurred. Another fact is also often cited: the commander of the "Komsomolets" (who survived) for some reason ordered the crew to assemble on deck instead of transferring to the floating rescue chamber, which would automatically remain afloat for days if the submarine were to go down. It is possible that the commander knew that the rescue chamber was not operational and instead opted for one final review. But thus far that is just a story that has not been confirmed by the evidence or the findings of a government commission...

The nuclear submarine "Komsomolets" was designed by the Rubin Central Marine Technology Design Bureau between 1964 and 1983, built by the Sevmashpredpriyatiye Production Association in 1978-1983, the only one of its kind, and turned over to the Navy in 1983. From 1984 until the submarine was lost in 1989 the vessel was undergoing sea trials while on patrol duty with the Northern Fleet.

The gigantic submarine, 119 meters long, with an exterior diameter of 11 meters and a displacement of 5,950 metric tons, now rests at a depth of 1,700 meters in the Norwegian Sea.

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According to experts its energy source, a nuclear reactor of the water-moderated, water-cooled type with a rating of approximately 200 megawatts, was shut down properly. The current danger stems from two missiles carrying nuclear warheads in two of the six torpedo tubes located in the bow. Each nuclear warhead contains approximately 3,000 grams of plutonium and a total radioactivity of approximately 200 curies. The four other torpedo tubes are occupied by two missiles and two torpedoes, all carrying conventional warheads. Racks in the first compartment hold six more missiles and 10 torpedoes, all with conventional warheads.

The fifth expedition to the wreck of the "Komsomolets," sponsored by the Russian Federation Ministry of Civil Defense, Emergency Situations and Natural Disaster Recovery, has released its initial findings. The money spent on the expedition, a total of R4.0 billion [rubles], apparently did go for research.

The opinion of experts and scientists in our country and abroad is unanimous: no radiation disaster has occurred. The water, soil and plankton samples taken from the vicinity of the submarine's bow section, where the nuclear warheads are located, confirmed that there has been only an insignificant release of plutonium and cesium, in amounts below permissible concentrations.

As has already been reported, experts using Mir deep-water diving craft have placed special titanium covers, each weighing 30 kg, over the cutwater cowlings of the torpedo tubes. This jeweler-precise job by Russian specialists was performed under very difficult conditions: gale-force storms, a strong underwater current and poor visibility at the bottom. It should be noted that this work by the pilots of the diving craft, or hydronauts, is compensated at the rate of R83,000 per month, plus \$5.00 for each dive (which lasts a total of 10-15 hours). The hydronauts have no social guarantees in the event of their death or serious injury, nor any right to special rehabilitation following a sea voyage. The directors of the expedition have still not seen their way clear to use some of the R4.0 billion spent on the expedition to pay these volunteer hydronauts a wage commensurate to their labor and their risk. Every dive on board a Mir diving craft is like a dance with death around the "Komsomolets." This was made clear to Sergey Khetagurov, first deputy minister of the Ministry of Emergency Situations, who made a working dive on board the Mir-2.

The fifth expedition also produced some sensational findings. According to Mikhail Vinogradov, a member of the Russian Academy of Sciences and deputy director of the Institute of Oceanology, at a depth of 1,700 meters biologists have discovered living microorganisms that migrate to the upper water levels and are the main food source for commercial fish species. It is no secret that that sort of food chain could end up serving a "radiant" fish dish to our tables. Of course, these facts will require confirmation and thorough study. Only then will we be able to reassure our fish lovers, not to mention Norwegian fishermen, whose principal source of income is fish.

One thing is clear: this fifth expedition sponsored by the Ministry of Emergency Situations laid the groundwork for further research. Currently the ministry is developing a concept for the establishment of an interagency rescue group that could in the future provide an emergency response to all possible underwater and surface disasters both in Russia and abroad.

(Our next issue will contain a detailed photo report from the Norwegian Sea by our special correspondent.)

Federal Ecological Fund Reports on 1993 Activities

94WN0354A Moscow NEZAVISIMAYA GAZETA
in Russian 20 Jul 94 p 6

[Article by Andrey Bayduzhiy: "How Much Does Ecology Cost?: The Russian Federal Ecological Fund Reports to the Government Regarding Its Activities"]

[Text] Is it possible to establish clearly-designated funding for environmental measures in Russia? According to the directors of the Russian Federation Federal Ecological Fund (FEF), who have made public a report to the government on their activities in 1993, that goal is now quite realistic. Thanks to the 1991 adoption of the law "On Environmental Protection" the country has witnessed the emergence and beginnings of effective functioning of a system of non-budgetary ecological funds which have made it possible to allocate very substantial funds to environmental purposes despite the current economic crisis.

The mechanism by which the system of ecological funds operates is simple: payment for environmental pollution and disposal of production-related wastes is made to regional ecological funds, which in turn pay 10 percent of all monies they receive into a federal fund. All the funds thus obtained may be used solely for environmental protection purposes. As is clear from the FEF report, in 1993 local funds received R83 billion [rubles] from polluters. Therefore the federal fund should have received R8.3 billion. However, it actually received only slightly more than half of the projected amount. The main reason for that is the fact that local ecological funds are not very eager to give Moscow even a portion of the funds they receive, preferring to spend them on environmental cleanup efforts in their home regions. In addition to the states that refuse to pay taxes into the federal treasury, i.e. Bashkortostan and Tatarstan, the need to make payments to cover Russia-wide needs is being completely or virtually completely ignored by the Taymir and Ust-Orda autonomous okrugs, Orenburg, Sverdlovsk and Vologda oblasts, Krasnodar and Krasnoyarsk krays, and Yakutia.

In Orenburg, Sverdlovsk and Vladimir oblasts the funds thus acquired are, in violation of current legislation, not even being used for specific environmental measures, but instead to support officials who serve on local environmental protection committees.

Yet despite such a long list of delinquents and violations, the directors of the federal fund feel that there are grounds

for optimism. In comparison with 1992 the number of regional funds not making payments to the FEF has decreased by a factor of four, and the total amount of shortfall has decreased from 79.2 percent to 40.8 percent. The FEF's directors hope that in the future this figure will be reduced to a minimum.

How were the funds paid into the Russia-wide environmental purse actually spent? First of all the report to the government notes that audits of the fund's operations conducted by an auditing commission and the Russian general procuracy did not uncover any significant shortcomings in its activities. All funds were spent solely to fund environmental protection efforts. Expert appraisals of the projects and proposals received were made in order to avoid ineffective expenditures. Eventually two-thirds of FEF funds were applied to specific projects. These included funding of federal programs on waste disposal, the manufacture of hazardous refrigerants, protection of Lake Baikal and the Volga, efficient utilization of water resources, etc. Particularly noteworthy were two projects carried out with FEF participation in 1993. With help from the fund the Russian Academy of Sciences Institute of Physical Chemistry and the Mayak Production Association were able to set up a facility to treat low-level radioactive water. This installation will finally permit Russia to halt the dumping of liquid radioactive waste from ships in its nuclear-powered fleet.

Another facility developed with fund participation, this one to process wastes of a different type, is equally essential to the Russian economy. Manufactured in Kirov Oblast, it will permit processing of manure-contaminated waste water from pig and poultry farms to recover high-quality fertilizer. In addition, the FEF record for 1993 includes assistance with the construction of plants to utilize various types of waste in Volgograd, Voronezh and Tambov oblasts, development of plans for seven nature preserves, and a number of other measures, ranging from the manufacture of water treatment filters in Yekaterinburg to a study of the *saiga* population in Kalmykia.

Despite all this, the Federal Ecological Fund almost ceased to exist in 1993. In Edict No. 2268, issued on 22 December 1993, Russian President Boris Yeltsin ordered the consolidation of all republic funds into the state budget, with only a few exceptions. This measure was strongly opposed by the FEF's directors and the Russian Ministry of Environmental Protection and Natural Resources, who pointed out that this step would result in a marked reduction in funding for environmental measures. Upon reconsideration the president changed his decision, and in late March instructed Viktor Chernomyrdin to maintain the FEF as an independent unit.

State Structures Unable to Cope With Increasing Number of Industrial Accidents

94WN0371A Moscow NEZAVISIMAYA GAZETA
in Russian 30 Jul 94 pp 1,3

[Article by Andrey Bayduzhiy: "The Time of Catastrophes Has Come in Russia; Rise in Accident Rate is Taking on Unprecedented Proportions"]

[Text] Twenty people died as a result of a gas explosion in a residential building in the city of Leninsk (Baykonur). However, precise data are not yet available. Yesterday, workers continued to pull victims of the tragedy which occurred here out from under the ruins of the five-story building. The gas explosion and the ensuing fire were so intense that rescuers could not get near the hot pieces of the wreckage for 24 hours. At the same time, two weeks ago, as our ITAR-TASS parliament correspondent reported, the work group of one of the State Duma committees visiting Baykonur issued a serious warning about the critical situation at the cosmodrome.

The parliamentarians told of their conclusions at a press conference held in the State Duma. The Leninsk parliamentarians called the state of affairs at the cosmodrome and in the city "scandalous." The deputies noted that the collectives, institutions and military units are expending incredible efforts to preserve the unique equipment and to maintain the pride of our country's industry and cosmonautics in working order. The situation in Leninsk is on the brink of a social explosion. The housing fund is deteriorating, the crime situation is becoming more complicated, and already more than 10,000 local residents have moved into the city of their own accord. Schools, kindergartens and hospitals are closing. In essence, there is dual authority in the city—there are two prosecutor's offices and two militias.

According to the statistics, every day in Russia there are two serious accidents along pipelines, once a week—in transport, and every month—in industry. Once in half a year there is an especially large industrial accident.

There are many reasons for such a high accident rate, but almost all of them may be reduced to one—the economic crisis. The disintegration of traditional ties between the enterprises of the former USSR, the desire of producers who are trying to stay afloat to economize on all and everything, including on safety, the absence of funds for repair of equipment which is becoming old—all this has led to the fact that the accident rate in Russia has taken on the scope of a national disaster, and the struggle with its consequences has become the No. 1 ecological problem.

Despite the continued decline in production, the number of accidents in Russian industry and transport increases every year. In spite of an 18 percent production decline in 1992, the overall number of industrial accidents increased by 17 percent as compared with 1991. In 1993 the number of catastrophes and persons killed in them increased by another 20 percent. The growth of the accident rate is continuing this year as well. While for all of 1993 in Russia there were 923 accidents and catastrophes in which 1,050 persons were killed, in the five months of this year there have already been 489 such occurrences recorded, and 811 persons killed. According to the predictions, in the next few years the accident rate level will increase annually by another 10-30 percent.

The greatest danger today is posed certainly not by the AES [atomic power plants], as is commonly believed, but by the enterprises of the chemical complex. Three-fourths

of the equipment at these enterprises has been in operation for over 20 years, and at many plants this time is 1.5-2 times longer. It is not surprising that each year in the chemical industry there are around 1,500 incidents (four a day) associated with the leakage of harmful substances, explosions or fires. Even the specialists do not try to predict where catastrophes may lead at some of the facilities. In the major chemical industrial centers such as Angarsk, Kemerovo, Ufa, and Sterlitamak, the simultaneous presence of highly toxic products at production areas reaches 100 billion lethal doses, while the energy content of explosive products concentrated in one hectare, translated to the trotyl equivalent, comprises 30,000 tonnes. But even on this background the city of Dzerzhinsk in Nizhegorodsk Oblast stands out, where a multitude of enterprises of the chemical industry are located over a relatively small area. Around 20,000 tonnes of strong-acting toxic substances of 25 different types are concentrated at 15 facilities in the city. In case of an accident at the PO [production association] "Kaprolaktam" which is located here, and if this accident entails the emission of ethylene oxide or if the hermetic seal is broken on one of the chlorine tanks, the contamination may encompass a territory of 20,000 square kilometers inhabited by almost 300,000 persons.

Aside from the chemical productions, the greatest danger is posed by the metallurgical and mining enterprises, as well as the facilities of the so-called fuel cycle. At the latter there were two accidents associated with emission of radioactivity in 1993. Aside from the memorable explosion of 6 April 1993 at the Siberian Chemical Combine, on 17 July of that same year there was a radiation accident at the PO "Mayak." As a result of the destruction of the sorption column, the production buildings were contaminated. Moreover, last year at the "Mayak" enterprises there were two other cases of radioactive emissions registered, and designated as incidents. On 2 August, due to a malfunction in the installation for purification of radioactive waste, 0.3 Curie of radioactive dust contaminated the industrial work area, and on 27 December approximately the same dose got into the atmosphere in the form of radioactive dust.

As for the atomic power plants, in the opinion of Yuriy Vishnevskiy, chairman of Gosatomnadzor [Russian Federal Oversight of Nuclear and Radiation Safety], the reduction in the number of accidents at them should not mislead anyone. The crisis of non-payments has led to the fact that today the AES do not have the money not only to pay wages to their workers, but also to perform current repairs and to buy fuel. Recently, for example, due to the absence of fuel it was necessary to shut down the 4th unit of the Balakovskiy AES—an unprecedented case in world practice.

If we try to find the sector which is the recordholder in growth of the accident rate, it would be metallurgy. In 1991 there were five accidents at metallurgical enterprises, in 1992 there were already 10, and in 1993—12. Railroad transport is also not far behind metallurgy in its rate of

increase of accidents. While in 1992 there were 12 major accidents involving dangerous cargo along the railroads of Russia, in 1993 there were already 20. There were also 3,233 smaller incidents recorded, which exceeded the level for the year before by almost three times.

Environmental pollution as a result of accidents at enterprises of the oil and gas complex deserves special mention. Here the greatest danger is posed by open gushers with uncontrolled output of oil and gas condensate. In 1992 there were nine of them, and in 1993—10. Many of the gushers flow for years and have not been liquidated to the present time.

Also, during oil drilling the environment is polluted not only as a result of accidents. Year in and year out, the practice of placing oil deposits into operation without provision of a system of collection of the natural gas is continued. In 1992 alone, 8.2 billion cubic meters of gas was burned in the torches, the overwhelming majority of which was in Tyumen Oblast. The huge gas fires which flare in Tyumen are easily visible even from spacecraft, and their negative effect on the ecology is taking on an ever more global character. Despite this fact, in 1994-1995 several tens more deposits will be placed into operation without a system of collecting the natural gas.

In the Summer of 1993 the problem of technogenic catastrophes was reviewed at the Council on Ecological Policy under the RF [Russian Federation] President. In July of this year it became the subject of discussion already at the conference of the Interdepartmental Commission (MVK) on Ecological Safety of the Security Council. As was noted at both of these meetings, in all probability the number of accidents and catastrophes in Russia will increase in the next few years. Convincing grounds for such pessimistic predictions consist of the extremely worn condition of the equipment at enterprises of specifically those sectors where accidents present the greatest hazard. If we return to those same oil and gas pipelines, their overall extent in Russia comprises 550,000 km. One in ten of them has been in operation for over 35 years, while pipelines which have functioned for even 10 years less are considered unreliable. An equally disquieting situation has arisen in other sectors as well. Around 60 percent of the boiler equipment in the Russian TET's [central heat and power plants] and metallurgical aggregates has outlived its service life. Two-thirds of the funds of the chemical and oil processing complex have been in operation for over 20 years.

Today there are several departments monitoring the status of safety in the various sectors: Gostekhnadzor [RF State Committee for Technical Oversight], Gosatomnadzor [Russian Federal Oversight of Nuclear and Radiation Safety], Minprirody [Ministry of Environmental Protection and Natural Resources], and MChS [Ministry on Affairs of Civil Defense and Extraordinary Situations]. However, their efforts are reminiscent of patching a coat that is ripping at the seams. To really put an end to the unsatisfactory situation with industrial safety in Russia is possible only after overcoming the economic crisis, when it

will finally be possible to close or, with the aid of investments, to modernize the outdated and dangerous productions.

Yet for now, over 800 nuclear and 1,500 "conventional" high-risk facilities are operating in the country, making almost the entire territory of Russia a dangerous zone, and its population—hostages of outdated equipment.

Under conditions when it will hardly be possible to prevent the increase in accidents in the near future, one of the primary tasks, along with preventing extraordinary situations, is to organize a precise system of liquidating their consequences. In January of 1994, the Ministry on Affairs of Civil Defense and Extraordinary Situations (MChS) was created expressly for this purpose. However, in the opinion of a number of those who spoke at the abovementioned meeting of the Interdepartmental Commission, instead of concentrating its efforts on the struggle against accidents and catastrophes, the new department has undertaken the fulfillment of the most varied tasks—from delivery of cargo to rayons of the Far North to holding humanitarian aid actions in Tanzania and the Transcaucasus. It is indicative that the deputy minister of the MChS, Sergey Khetagurov, who was to have presented a speech at the meeting of the commission, was at that time overseeing the mothballing of the "Komsomolets" in the Sea of Norway. The presentation by the chief of administration of the MChS who filled in for him, Yevgeniy Kozlov, in the opinion of members of the MVK did not contain the concept of struggle against extraordinary occurrences and was subjected to rather harsh criticism. For example, as the head of administration of Arkhangelsk Oblast, Pavel Balakshin, announced, the present-day multi-profiled description of the MChS is explained not by objective reasons, but exclusively by the activity of the young and energetic Minister Sergey Shoygu, who has given his structure extremely broad functions. Then again, Yevgeniy Kozlov did not agree with this opinion, stating that the detraction of forces of the ministry away from the struggle with catastrophes to the fulfillment of other tasks is sooner not the fault, but the misfortune of his department. There is simply no one in the country to engage in the solution of many pressing problems.

For the time being, however, each month Russia is forced to spend one-two percent of its gross product for the liquidation of industrial accidents. In the next few years, according to certain evaluations, this share will increase to four-five percent, and will exceed the combined expenditures for public health and the environment.

BELARUS

Post-Chernobyl Medical, Power-Generation Problems Viewed

MM1508150994 Moscow ROSSIYSKAYA GAZETA
in Russian 13 Aug 94 First Edition p 6

[Report by Prof. Boris Savitskiy, chairman of the Republic of Belarus Supreme Soviet Standing Commission for Questions of Ecology and the Rational Use of

Natural Resources: "Problems: Are Nuclear Power Stations Necessary?"—from the "Newspaper Within a Newspaper" section]

[Text] The participants in the first international congress entitled "The World After Chernobyl" in Minsk devoted particular attention to questions pertaining to the provision of humanitarian aid for the residents of areas affected by the Chernobyl disaster. The need was stressed to reorient this aid to the delivery of acutely necessary medical, primarily diagnostic, equipment and scarce medical preparations not manufactured in the CIS.

For possibly the first time in the history of such forums discussion of the main topic at the congress took place with virtually no discussion of the military aspects of the problem. The reports during this cycle were mainly devoted to the development of and alternatives to nuclear power generation.

The overwhelming majority of the participants opposed the development of nuclear power generation at all at the present time and in the Republic of Belarus specifically.

The congress participants emphasized that the solution to Belarus' power and many of its economic problems lies not in developing its own nuclear power industry but in modernizing and converting outdated power-intensive production units and organizing universal energy and resource saving as a top-priority state program. By increasing energy production and artificially reducing the price, we are thus investing in the preservation of obsolete and outdated power-intensive production units and maintaining a disorderly, thoughtless attitude toward electricity as a free resource produced at a miserly cost.

In their appeal to the peoples of the world the congress participants urged the world community to assist the Republic of Belarus in transforming it into a state with an environmentally clean power industry. All the conditions exist in the republic, including the moral and technical conditions, even if thermal power stations are kept as the main source of heat and power.

Interestingly, during the meeting in Minsk some projects were put forward for the use of nontraditional power sources making it possible to obtain quite large quantities of electricity. Among them was a plan for a fuel-free installation for the production of electricity, heat, and cold using the reduced natural gas energy in the republic's gas pipelines—a plan that has already begun to be put into practice.

Representatives of the "KAYa" [name as transliterated] international humanitarian organization announced the start of work on the construction near Minsk of a children's home for orphaned children from the Chernobyl zone—a home whose power supply will be provided by autonomous sources from the transformation of wind and solar energy.

Regrettably, there were no reports at the congress on fuel-saving measures at existing thermal power stations, which should have been expected from the Ministry of

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Energy. And, quite strangely, nothing was heard at the congress from representatives of the State Committee for Problems Arising from the Consequences of the Chernobyl AES Catastrophe nor from energy consumers' organizations and departments, who have on their conscience tremendous energy consumption and overconsumption.

Radioactive Berries, Mushrooms Gathered in Gomel Oblast

LD2208121894 Minsk Radio Minsk Network in Belarusian 0700 GMT 22 Aug 94

[Text] At least half of the forest berries collected this year by people in Gomel Oblast exceed the permitted levels for contents of radionuclides. This is shown by the results of checks by oblast health services. Radioactive berries were found in 20 rayons of the oblast, and only in Oktyabrskiy Rayon there are no reports. These figures do not require comment. One can only recall that the results of analysis of mushrooms show 80 percent of them should not be used.

ESTONIA

Degree of Environmental Damage Caused by Soviet, Russian Military Assessed

WS2208102094 Tallinn ETA in English 0710 GMT 22 Aug 94

[From 22 Aug EESTI SENUMID, p.1; "News Bulletin" No. 161]

[Text] Elimination of the environmental damage caused to Estonia by the Soviet and Russian military will cost over 4 milliard dollars, the Foreign Ministry announced, referring to a report of the Environment Ministry experts.

A thirteen-member team of experts assessed the environmental damage and reached the conclusion that the total cost would be 54,752,697,000 kroons or more than 4 milliard U.S. dollars, plus another 4.4 milliard kroons in unpaid environment tax. The most costly operations are the disposal of unexploded bombs and artillery shells at the former Soviet bombing and shooting ranges, the cleanup of the Paldiski nuclear site and the liquidation of the Sillamae radioactive waste dump (the factory used to be administered by the Soviet Ministry of Defence).

The Soviet Armed Forces held 83,650.87 hectares or two per cent of Estonian territory and built a total of 570 military sites. 212 of them were located in Tallinn. The team has also studied 85 per cent of the former Soviet-held territory, assessed the damage caused to the soil, ground water and human population.

KAZAKHSTAN

Dismantling of Nuclear Device at Semipalatinsk Discussed

LD2508142594 Moscow INTERFAX in English 1340 GMT 25 Aug 94

[Text] The dismantling of a nuclear device which had been placed in the Semipalatinsk testing ground before its closure was discussed at a second meeting of a Russian-Kazakh coordinating group.

A communique on the meeting, held in the town of Kurchatov, Semipalatinsk Region, on August 15-20, says that the opening of the adit and dismantling of the device proceeds on schedule.

Special attention was paid to the environmental safety factor. Radiation measurements were taken in the adit and its portal by engineers of the Kazakh National Nuclear Center and the Russian Federal Nuclear Center in the presence of the coordinating group members and experts. The communique says that the radiation did not exceed the natural background level.

The group will meet again no later than September 19.

LATVIA

Environmental Cleanup of Former Rumbula Airfield Scheduled

WS2208144494 Tallinn BNS in English 1225 GMT 22 Aug 94

[Text] Riga, Aug 22, BNS—The Latvian Environmental Protection and Regional Development Ministry works at a project to clean up the territory of the former Rumbula military airfield in the suburbs of Riga.

The project will be implemented in cooperation with the Danish Freshwater Center firm, which has great experience in the field. The three-year project will be partly sponsored by the Danish Government.

The former Rumbula airfield territory is one of the environmentally most dangerous places in Latvia posing a real threat to the Daugava river and, consequently, the Baltic Sea. The heavy pollution of the vicinity formed in the early 1980's when the military aviation unit moved to Lielvarde.

In the given economic situation, it was considered disadvantageous to pump out and take to Lielvarde the huge supplies of aviation fuel. Finally, the fuel was simply spilled in the airport territory. Today, it is difficult to find persons responsible for the polluting because the airfield was also used by the former Soviet flag carrier Aeroflot.

A similar cleaning project is being carried out in a former Soviet aviation base in Estonia. Since its start three years ago, the project has claimed 5 million Danish kroner. In Latvia, the works could cost more because of complicated geological conditions. The Danish specialists will also help Latvian colleagues to draw up a map of ecological risk to enhance regional environmental planning.

The German Government has allotted Latvia 7 million marks to carry out a similar clean-up in the Daugavpils waste dump and the Milgravis oil processor.

No Radiation Increase Observed After Ignalina Shutdown

WS1108122794 Tallinn BNS in English 1659 GMT 10 Aug 94

[Text] Riga, Aug 10, BNS-AP—Latvia's automatic environmental monitoring stations, which measure radiation

every 15 minutes, have reported no deviation from the norm after the shutdown of Lithuania's Ignalina reactor. A reactor at the nuclear power plant shut down when the safety system detected a problem, but there was no rise in the level of radioactivity there.

Victor Shevaldin, general director of the Ignalina Nuclear Plant, said the automatic safety system registered damage of an unspecified nature Tuesday night, which immediately shut down the reactor. Inspectors examined the reactor and have been unable to find any damage, and it was expected to be switched on again later Wednesday, Shevaldin said. The level of radioactivity "in and outside the nuclear plant remained unchanged," Shevaldin told BNS.

The reactor normally produces 750 megawatts of electricity and has a maximum capacity of 1,300 megawatts.

The plant has two reactors. The other has been shut down since July 30 for planned maintenance.

LITHUANIA

'No Evidence' of Damage at Ignalina Nuclear Station

LD0908112094 Vilnius Radio Vilnius Network in Lithuanian 0900 GMT 9 Aug 94

[Text] Viktor Shevaldin, director of the Ignalina nuclear power station, told the Lithuanian news agency ELTA that at 0317 this morning an automatic safety device came into operation shutting down the first power unit at the Ignalina power station.

No evidence of damage to the equipment has been found. The radiation level at the power station and beyond its territory has not changed and does not differ from the usual level.

The automatic safety device switched off a faulty generator. The nature and the reasons for the occurrence of the fault will be established later.

The shut down of the power unit has no impact on safety and according to the international scale for assessing nuclear accidents this case is put at zero level.

The power unit should be put back into operation tomorrow.

No Radiation From Accident at Ignalina Nuclear

LD0908103794 Riga Radio Riga Network in Latvian 1001 GMT 9 Aug 94

[Text] An accident happened at Ignalina nuclear power station at 0317 hours [0017 GMT] this morning. The nuclear power station automatically discontinued its work because one of the generators broke down. Radiation did not increase in the vicinity of Ignalina nuclear power station.

It should be added that Ignalina nuclear power station is situated only several dozen km from Daugavpils and that it is one of the most powerful nuclear power stations in the world.

UKRAINE

Official Claims Leakage From Nuclear Power Plants 'Currently Impossible'

LD2408130694 Moscow INTERFAX in English 1100 GMT 24 Aug 94

[Text] In an interview with Interfax-Ukraine Nur Nigmatullin, deputy chairman of Ukraine's state committee on atomic energy, declared that leakage of radioactive materials from Ukrainian atomic power plants is currently impossible.

He said control over utilization of uranium at the atomic power plants was imposed after two nuclear fuel elements were stolen from the Chernobyl atomic power plant six months ago.

"According to experts from Ukraine's Security Service, today any leakages are impossible," Nigmatullin said. At the same time he recognized that the fuel elements from the Chernobyl atomic power plant have yet not been found.

"We have many times asked the Security Service to tell us the results of the search but they do not report anything until concrete results are received," Nigmatullin said.

Nuclear Society Addresses Leaders on AES Safety, Production

LD1208164294 Kiev UNIAN in Ukrainian 1130 GMT 12 Aug 94

[Text] Odessa [no date as received]—UNIAN learned today that the Odessa-based Ukrainian Nuclear Society has written to the president, the chairman of the Supreme Council, and the prime minister of Ukraine expressing serious concern at the situation in power engineering, a sector which accounts for 42 percent of Ukraine's requirements for electric power. The appeal says that a difficult situation has developed at all Ukraine's nuclear power plants. The national distribution center at the Ukrainian Ministry of Power Engineering, which mediates in the sale of "peaceful atoms" to energy consumers, owes nuclear power plants 1.7 billion karbovantsi. Nuclear power plants are unable to pay for the supply of new fuel, equipment and spare parts, which affects the stability and safety of power generating sets.

"Unless urgent measures are taken," the letter says, "as early as this autumn, nuclear engineers will be forced to stop (five-six) generating sets with a capacity of 1,000 megawatt each, due to poor safety standards, which will result in a loss of 20 percent of electric power produced in the state. Thermal power stations will be unable to offset shortages caused by lack of crude oil, gas and coal, and Ukraine's power grid will face the threat of destruction." In view of these circumstances, the Ukrainian Nuclear

Society is calling for not only a clear state strategy with regard to the nuclear power complex, but also urgent government action to safeguard the work of nuclear power stations during the autumn and winter of 1994-95.

'Catastrophic' Ecological Damage by Black Sea Fleet Viewed

WS1108102394 Kiev UKRAYINA MOLODA
in Ukrainian 5 Aug 94 p 3

[Report by Heorhiy Veremiychyk, head of the press center of Ukraine's Ministry of Environmental Protection: "Poisoned Apple at Black Sea Market"]

[Text] The fuss over the Black Sea Fleet, which has become an issue of contention between Russia and Ukraine, the meticulous counting of ships, submarines, aircraft, and even blankets that are part of the so-called on-shore infrastructure, did not prevent serious experts from realizing that rusty ill-equipped vessels are not worth a dramatic conflict between two neighboring states. The only thing that is probably worth grave attention is the ecological aftermath of the Black Sea Fleet's operations.

Some time ago, a competent Ministry of Environmental Protection commission, which included officials from the Defense Ministry, the State Committee for Housing and Communal Property, the State Committee for Oil and Gas, and the National Academy of Sciences examined the state of environmental protection at Black Sea Fleet naval bases. It was discovered that the prolonged maintenance of vessels and facilities belonging to the fleet without observation of any environmental-protection technologies has produced catastrophic results.

As a result of uncontrolled activities of the fleet's fuel depots, 7,700 hectares of land and 10 million cubic meters of subterranean water have been contaminated. Concentration of hazardous elements in the famous Sevastopol harbors exceeds recommended limits by 10 times, and in the vicinity of the fleet's fuel base—by 180 times.

The bottom of Sevastopol harbor is in sad shape. Its muck has accumulated almost 20,000 tonnes of oil products. Moors erected by Navy specialists who have been the Black Sea's unrestrained masters for decades, disrupted water exchange between the harbors and the sea and completely annihilated the ecological system.

The Black Sea Fleet's on-shore units, too, constitute a grave danger to the health of Sevastopol residents. Technological and everyday waste has been accumulating there for years, and the military command never cared about its utilization or dumping. Meanwhile, the technological burden imposed on the environment has had repercussions on the health of Sevastopol residents. According to the Ukrainian Ministry of Health Protection, death rates in the city have increased by three percent, while birthrates have gone down by 15.3 percent. The rate of respiratory ailments has increased by 12.6 percent.

To somehow improve the situation, oil products must urgently be removed from soil and subterranean aquifers;

hazardous waste on the territories of military units must be disposed of or processed; and Sevastopol's water supply and sewage system must be rebuilt. The Ministry of Environmental Protection commission used the methodology of evaluating losses once accepted to assess damage done by the Soviet Army in East Europe. This produced a monstrous sum of \$6.3 billion.

The commission suggested that this money be repaid by the future successors to the Black Sea Fleet, and that the procedure of payments to the local nonbudget environmental-protection funds involve Black Sea Fleet units and facilities. These proposals, however, remained a lone voice crying in the wilderness. Not only Black Sea Fleet Commander Eduard Baltin, but also officials from his retinue, refused to receive commission members.

At present, while discussing the fate of the fleet at the next round of negotiations, Ukraine must take into account the cost of all measures needed to eliminate the ecological consequences of the red-banner fleet's stationing in the "bluest in the world" Black Sea. The total sum is \$19.4 billion. The commission believes that the negotiators must, in particular, take into account the cost of the restoration of the ecological system in the area of the fleet's stationing, as well as draft an international agreement that would include the commitments of the parties (including financial ones) regarding the elimination of pollution.

Yuriy Ruban, first deputy minister of environmental protection, has addressed the Supreme Council with a motion drafted on the results of the commission's activities, requesting that the legislature pays attention to another zone of ecological disaster.

'Large' Oil Spill Near Sevastopol Reported

MK1008111594 Moscow NEZAVISIMAYA GAZETA
in Russian 10 Aug 94 p 3

[Unattributed report under the "NEGA Report" rubric: "Crimea"]

[Excerpt] A major ecological disaster occurred during the celebrations of Navy Day in Sevastopol—a large quantity of petroleum products was spilled in Artilleriyskaya (Sevastopolskaya) Bay. The Black Sea Fleet press center circulated a statement in this connection dismissing the accusations of some of the mass media, which "hastily put the blame for the incident on the Black Sea Fleet ships participating in the Navy Day celebrations." Observers believe the consequences of this major ecological disaster are unpredictable as far as Sevastopol residents are concerned.

UZBEKISTAN

Lack of Progress in Cleaning Up Pollution From Uranium Mining Criticized

MM1008133994 Moscow PRAVDA in Russian
10 Aug 94 p 2

[Report by Galina Bilyalitinova: "Fergana Valley Through a Geiger Counter"]

[Text] Dozens of telephone calls from Kirghizia [Kyrgyzstan], Uzbekistan, and Moscow in response to the article in PRAVDA entitled "Uranium Roses Are Blooming" 20 July this year not only confirmed the catastrophic situation in the region but also named more sites of the deadly burial chambers: Min-Kush, Kadim-Say, Shakaftar, etc. Today over 40 of them have been recorded in Kirghizia [Kyrgyzstan]. For many people it is sensational that this small, once environmentally clean republic was the raw material base for the development of the Soviet Union's nuclear weapons. The deadly uranium ore was extracted here for decades and at the same time the simplest rules of mining were not observed.

Today mountain torrents and rain water freely carry toxins into rivers and lakes which in turn irrigate the fields, sowing a slow mass death for all living things. A high level of radiation has also been discovered in the Syr Darya river, and thus there is a threat to the Fergana Valley, Uzbekistan's granary.

At a press conference to mark the second anniversary of Uzbek independence, in response to my question to the

republic's prime minister about emergency measures for the environmental protection of the Fergana Valley, the head of government assured journalists that competent commissions from the two countries—Kirghizia and Uzbekistan—would take urgent steps in the next few days to eliminate the centers of uranium.

Three months have gone by, the waters of the Syr Darya are still "irrigating" the Fergana Valley, and the president of Kirghizia is currently working out a route to climb one of Central Asia's peaks. Admittedly 250 million rubles were promised to eliminate the catastrophe after the Kirghiz public decided to ask the United Nations for help. Experts calculated that this sum is not enough to resettle even one town.

And another point. It would be quite logical and humane if countries with nuclear weapons using uranium-based raw materials from Kirghizia (namely Russia, Ukraine, Belorussia [Belarus], and Kazakhstan) could earmark funds to eliminate the radiation danger in this republic.

REGIONAL AFFAIRS

German EU Presidency To 'Actively' Seek Progress on Environmental Policy

AU0808192994 Bonn DAS PARLAMENT in German
Nr. 31/ 5 Aug 94 p 15

[Report by Hartmut Hausmann: "Pushing Ahead With Building Europe"]

[Excerpt] During its presidency of the European Union Council, the German Federal Government intends to focus its initiatives on the reduction of the high unemployment. It is humanly and economically unacceptable that the skills of almost 20 million people are lying idle, said Foreign Minister Klaus Kinkel in the European Parliament in Strasbourg on 20 July, when he presented the working program for the second half of 1994. Even though the economic development has started to improve again, the structural renewal of the European national economies remains a primary task to preserve competitiveness at a global level. Regarding the goals of the action program decided by the European Council, Kinkel stated:

"This also means modernization, deregulation, and focusing on innovation and entrepreneurial spirit. However, this must not be a signal for social cutbacks or for neglecting environmental issues. Here the European Union has a special vocation. The German presidency will, as it made clear at the meeting of the labor and social affairs ministers in Dortmund, particularly advocate the strengthening of the social dimension. This includes an active employment policy as well as innovative approaches to, e.g. part-time work and basic and advanced vocational training.

"The German presidency will actively try to achieve progress in environmental policy. Here the focus is an European Union-wide strategy for the protection of the climate, including progress in introducing a carbon-dioxide energy tax, which must be cost- and competition-neutral. Small- and medium-sized companies are creating an above-average number of jobs. The Commission's integrated program for small- and medium-sized companies must, therefore, be pushed ahead quickly. The priority projects for trans-European networks must be tackled energetically. The European Union's research programs, to which the Parliament has always paid particular attention, are important in this connection. The policy of the public budgets must also contribute to the structural change. Budget discipline and a careful coordination of the economic policies are indispensable for the implementation of the economic and monetary union in line with the Maastricht Treaty." [passage omitted]

New EC Director-General Says European Energy Tax 'On the Way'

BR1808135194 Amsterdam TECHNISCH
WEEKBLAD in Dutch 27 Jul 94 p 2

[Interview with M.E.E. Enthoven, new EC director-general for Environment, Nuclear Safety and Civil Protection, by Bart Stam; place and date not given: "Ir. M. Enthoven: A European Energy Tax Is on the Way"]

[Text] Europe—Although our country may sometimes miss the top jobs in Brussels, the post of director-general for Environment, Nuclear Safety and Civil Protection (DG XI) seems firmly fixed in Netherlands hands. On 1 September M.E.E. Enthoven (aged 53) will succeed his fellow countryman L.J. Brinkhorst. Enthoven, director-general for Environmental Management of the VROM [Ministry of Public Housing, Physical Planning, and the Environment], is the architect of the National Environmental Policy Plan (NEPP).

Stam: Your background is as an engineer in aviation and space technology. Will environmental technology receive more attention during your term of office?

Enthoven: Environmental technology is already an important component in the European Commission's economic policies. In the Delors White Paper it was one of the main points along with information technology and biotechnology. As an engineer perhaps I have a better understanding of the backgrounds to environmental techniques.

Stam: Some critics say that DG XI has too little staff, money, and influence in the European Union (EU).

Enthoven: It is true that my directorate is one of the smallest units of the European Commission. The DG's for the single market and industrial affairs are bigger, but that is because of the EU's economic origins. During the past years Brinkhorst ensured that more attention was given to the environment in Brussels. I also think that cooperation between the Environmental Affairs DG and other units can be improved.

Stam: In Brussels you have 400 staff at your disposal. At the VROM you were in charge of 1,100 civil servants.

Enthoven: Less civil servants in no way means that we have less influence. At the VROM we have 300 environmental inspectors, but they also have to monitor the permits at companies. The European Commission does not do that itself but leaves it to the member states.

Stam: You are in favor of a European energy tax. This is opposed by the industry in particular. Will an energy tax be realized during your office?

Enthoven: I am very convinced that it will happen, probably in a few years' time. Something must happen to ensure that energy is used more sparingly. The process must be assisted because low energy prices do not encourage improved energy savings and yields. Probably a new measure of this kind would be introduced gradually. Perhaps the schemes will make exceptions for Southern Europe or some economic sectors because of their competitive position in the world.

Stam: Two years ago the European Commission's fifth Environmental Action Program [EAP] took effect. How is it doing?

Enthoven: The EAP is like our own NEPP. Now Brussels has also identified the important environmental themes and target groups. An interim assessment showed that

considerable attention is being paid to this program in virtually all the member states.

Stam: If Austria, Sweden, Finland, and Norway join this autumn then the EU will have 16 members. Will effective decisions in the environmental field still be possible then?

Enthoven: The Maastricht Treaty means that it is no longer necessary for all decisions in the Council of Ministers to be taken unanimously. Sometimes a substantial majority is enough. Moreover countries may take stricter measures in some cases.

Of course it is more difficult to negotiate with 16 countries, compared with one or two parties like in the Netherlands. But I still see more advantages than disadvantages in the coming expansion. Austria, Sweden, Finland, and Norway have been serious about the environment for a very long time.

Stam: Your predecessor, Brinkhorst, was director-general for Environment for eight years. Will you make changes?

Enthoven: Brinkhorst's great service is that he ensured that environmental matters are receiving more attention in the European Commission. He has also built networks between top civil servants in the member states, for example. Cooperation between the Commission and governments has also been improved. Far more joint work is done on strategic areas than in the past. I would like to continue that approach.

AUSTRIA

Vranitzky Says 'Hearing' on Slovak Nuclear Plant 'Desirable'

AU1908144894 Vienna WIENER ZEITUNG
in German 19 Aug 94 p 1

[Unattributed report: "Keep At It in the Case of Mochovce"]

[Excerpt] Chancellor Vranitzky thinks it would be very desirable for a hearing to take place in Austria as part of the "civic participation procedure" regarding the Slovakian nuclear power station at Mochovce. Such a possibility was mentioned on 10 August during an argument between the authorities and environmentalists in Bratislava.

As Vranitzky emphasized, the Federal Government wants to be consistent in pursuing its course of informing neighboring countries about the concern felt by the Austrian population over nuclear power stations close to the border.

In the case of Mochovce too, one wants "to keep at it" and check the possibility of diplomatic steps if the request for a hearing in Austria is put on the back burner by Bratislava. [passage omitted]

FRANCE

Negotiations Underway on Use of Plutonium in Russian Power Stations

BR1908132194 Paris LA TRIBUNE DESFOSSÉS
in French 19 Aug 94 p 11

[Report by Elisabeth Rochard: "How To Use Plutonium To Generate Electricity"]

[Excerpts] After Bonn and Washington, it is now the French Government's turn to be worried about the proliferation of trafficking in radioactive substances. Yesterday [Environment Minister] Michel Barnier requested concerted action at the European level to "put an end to trafficking in nuclear materials which can pose a threat to people's safety and the environment." The environment minister asked his German counterpart Klaus Topfler to include this point in the agenda of the forthcoming meeting of the Twelve's environment ministers on 4 October. [passage omitted on plutonium seizures]

The applications of plutonium are not very numerous. One (peaceful) application consists of using it to generate electricity.

As a matter of fact, negotiations are currently under way between France and Russia on the use of plutonium in Russian power stations. Highly enriched plutonium (over 97 percent) can also be used to manufacture nuclear weapons. However, the amounts seized are not enough for either of these applications. We are left, therefore, with the most likely hypothesis, namely, that numerous countries are wishing to acquire plutonium technology.

Over 6,000 Jobs Reportedly Created in Environment Sector Since 1993

BR0908132594 Paris LE FIGARO (LE FIG-ECO
Supplement) in French 9 Aug 94 p III

["S.M."-signed report: "The Environment at the Service of Employment"]

[Excerpt] More than 6,000 "green jobs" created since the start of 1993, perhaps 20,000 more by next year... A drop in the ocean compared with the 3.33 million people currently unemployed in France. But also the confirmation that the environment does generate jobs.

From the supervision of green spaces to the maintenance of rivers and forests, and including the sorting of household waste, "the creation of 'green jobs' is primarily related to projects": This is the guideline laid down by the Environment Ministry. The latter has no hesitation in rejecting some projects, which it regards as not very serious even if they may create jobs.

Having no constraints to create jobs at any cost, the local authorities, who are mainly responsible on the ground, can distribute the manpower with greater flexibility and freedom. According to Alain Bahuet, head of employment at the Environment Ministry, "the lack of job quotas encourages quality rather than quantity."

Similarly, the local authorities seem to have benefited from this freedom of action to create more "green jobs" in the form of open-ended contracts than the public authorities had foreseen. The operation, launched in February 1993, has received 200 million francs [Fr] in government funding so far, and an additional Fr100 million will be given. [passage omitted]

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GERMANY

Toepfer Issues Orders on Construction of Hanau Facility

AU1908065494 Berlin DIE WELT in German
18 Aug 94 p 2

["HH"-attributed report: "Toepfer Orders Construction of Nuclear Facility"]

[Text] Bonn—Bonn Environment Minister Klaus Toepfer (Christian Democratic Union) yesterday issued another order to his Hesse colleague Joschka Fischer (Greens) for the construction of the plutonium-mixed oxide facility (MOX) in Hanau. With the agreement of the Cabinet, he ordered Hesse to issue 12 sub-permits for the construction of the Siemens fuel element facility. Fischer has delayed the permits without good reason, it was said.

Following the latest court rulings on the nuclear energy policy, Toepfer explained to the Cabinet that the Federal Government has "been confirmed by the courts in its actions" in all controversies with the land governments in Hesse and Lower Saxony, which are oriented toward opting out of nuclear energy. Between 1991 and 1994, Bonn issued a total of 24 orders to the laender of Hesse, Lower Saxony, and Rhineland-Palatinate.

Over the past years, some land governments considerably hindered the peaceful use of nuclear energy, including disposal, in Germany by referring to safety considerations. "In reality, however, land governments led by the Social Democratic Party of Germany or a red-green coalition just wanted the politically motivated opting out of nuclear energy."

Toepfer appealed to the laender to conduct the licensing procedures for nuclear facilities according to the law. Opting out is not possible on the basis of the current laws. If someone wants it, the nuclear law must be amended accordingly—with the parliamentary majorities that are necessary. The execution of the law is the precondition for the resumption of the consensus talks, which were interrupted by the Social Democratic Party of Germany in October 1993. The Federal Government thinks that the energy consensus is "urgently necessary" so as not to endanger Germany as a business location.

The Hesse Environment Ministry reacted with dismay to Toepfer's step, because a talk concerning the Federal Government's supervisory authority had been scheduled in Bonn for today, which would have dealt precisely with the contents of the order. However, Fischer did not leave any doubt about the fact that the order from Bonn will be obeyed. At the same time, Fischer's spokeswoman accused Toepfer of doing "a put-up job with Siemens" by issuing this order so as to establish the basis for a potential lawsuit about damages against Hesse. The corporation has announced that it intends to demand up to 500 million marks in damages because of the delay in the construction of the facility.

Lower Saxony's Schroeder Stresses Need for Energy Consensus

AU2408163294 Duesseldorf HANDELSBLATT
in German 24 Aug 94 p 6

[Interview with Lower Saxony Minister President Gerhard Schroeder by Heinz Juergen Schuermann on 23 August; place not given: "Schroeder: The Industry Must First Specify Its New Reactor Concepts"]

[Excerpt]

Schuermann: Mr. Minister President, like Environment Minister Toepfer, you pointed out the need and your readiness last week to continue the agreement on an energy consensus as soon as possible after the Bundestag elections. At the same time, the Social Democratic Party of Germany [SPD] and the Greens are competing in calling for the closure of nuclear power plants, and the SPD decided to advocate a halt to the use of nuclear energy. Is this compatible?

Schroeder: Decisions and announcements as to what the SPD plans to do as the future government party may form the basis of talks on an energy consensus. This should disturb the search for a consensus as little as the programmatic statement by the future opposition party that nuclear energy is the energy of the future. What really upsets the planned consensus talks or what makes them or is designed to make them impossible are unilateral efforts to create energy-political facts shortly before the elections and completely unnecessary provocations in day-to-day political life.

Schuermann: Why is the direct final disposal, for which a legal basis has been provided by the government, a unilateral fact? The SPD has demanded that for a long time.

Schroeder: The SPD has never suggested adopting this principle of disposal as an isolated measure, claiming that the rest should regulate itself or not. However, this is exactly what the Federal Government has done by adopting the law. Direct final disposal is now legally possible but there are no regulations concerning the quantity, and it is not clear what will happen with the nuclear waste until its final disposal. Let me just mention one absurd conclusion: If the unsuitable final disposal site of Gorleben were realized swiftly according to the government's plans against the bitter resistance of the land Lower Saxony, it would subsequently remain unused for 20 years because one would have to wait for the fuel rods to cool during the intermediate storage. Finally, security forces are also required for such visible inadequacies. The disposal issue requires a number of individual coordinated regulations. So long as no consensus is achieved among the parties and among the regions, the disposal continues to be unsettled with all consequences. [passage omitted]

Waigel Comments on Prospects for Emissions Tax

AU2208142494 Hamburg BILD AM SONNTAG
in German 21 Aug 94 pp 4,5

[Interview with FRG Finance Minister Theo Waigel by F. Weckbach-Mara; place and date not given: "The Tax on Exhaust Emissions Is Coming"]

[Excerpt]

Weckbach-Mara: Everyone is talking about new taxes. What is in store for the citizens after the Bundestag election?

Waigel: The tax decisions for 1995 have already been taken. The solidarity surcharge will be raised by 7.5 percent, and the tax on insurance premiums will be raised from 12 to 15 percent. The tax on accumulated wealth will also be raised. There will be no further increase in the tax and levy burden. There will only be a restructuring of taxes, which does not represent any increase. On the contrary, we must reduce the tax burden as soon as we can.

Weckbach-Mara: The Social Democratic Party of Germany [SPD] has also been promising a restructuring of taxes for the sake of justice and in order to protect the environment.

Waigel: The SPD makes promises it cannot keep. If people consumed less energy, one environmental objective would be reached, but in such a case Minister Lafontaine would have a large hole in his budget. In any case, pensioners and students have to pay more because income tax reductions do not affect them.

Weckbach-Mara: But if our neighbors introduce a tax on emissions based on the quantity of carbon dioxide emitted by cars and industrial plants, will you not follow suit?

Waigel: Yes, but only if such a tax is introduced everywhere in Europe, and even then we will keep such a tax independent of income and competition. To offset this, there will be certain tax concessions, for instance on automobile tax. [passage omitted]

SPD Presidium Plans Ecological Tax Reform

AU1608190394 Berlin DIE WELT in German
16 Aug 94 p 2

- ["UR" report: "Radical Change of Course in Energy Policy"]

[Excerpt] Bonn—The Social Democratic Party of Germany [SPD] has announced that it will radically change the energy policy course and abandon nuclear energy if it wins the elections. At its first meeting following the summer recess, the SPD Presidium adopted a statement on a new, ecologically-oriented energy policy, which is to include an ecological tax reform with higher energy prices.

The focus of yesterday's meeting, which was attended by Lower Saxony's Environment Minister Monika Griefahn in addition to Minister President Gerhard Schroeder, was the controversy with the Federal Government over the final storage of nuclear waste. Today Schroeder will discuss the matter with FRG Environment Minister Klaus Toepfer, Christian Democratic Union [CDU]. SPD Chairman Rudolf Scharping accused the Federal Government of trying to establish facts with the transports to Gorleben and Morsleben shortly before the elections and attempting to put pressure on the laender. The Federal

Government thus endangers the "necessary social consensus in this important topic for the future." [passage omitted]

German-Russian Cooperative Plans 'Environmentally-Friendly' Hydrogen Plane

AU2308194294 Berlin DIE WELT in German
23 Aug 94 p 7

[Report by Silvia von der Wieden: "Flying With Hydrogen; German Aerospace and Lufthansa Develop New Environmentally-Friendly Aircraft"]

[Excerpt] [Passage omitted] A German-Russian cooperative plans to develop a hydrogen-propelled environmentally-friendly aircraft. The cooperative includes such renowned technological enterprises as Lufthansa and the Russian aircraft producer of the legendary Tupolev 155—the demonstration aircraft that took off with the aid of hydrogen for the first time in 1988.

The engineers are still struggling with basic technical problems. At normal temperature, hydrogen is gaseous. Thus, fuel tanks 10 times the size of kerosene tanks would be required. However, the environmentally friendly fuel has a calorific value three times as high as that of kerosene. Liquefaction would be a way out of the dilemma. Yet to transform hydrogen gas into a space-saving liquid, minus 253 degrees Celsius are required. This temperature can hardly be reached without complicated cooling technologies. Even if this were accomplished, the size of the tanks would still be enormous. Without major modifications, it would not be possible to fit them into standard series-produced aircraft.

Whereas the fuel tanks are located in the wings in kerosene-propelled aircraft, the hydrogen tanks of the new aircraft generation are installed directly above the passenger cabin. There they are divided into smaller units so as not to upset the balance of the aircraft while extracting fuel.

Because of the more advantageous energy content of hydrogen, a hydrogen-propelled aircraft needs only one-third of the usual fuel volume. This makes it lighter than traditional aircraft.

This effect may have other technical consequences. Thus, a clearly lighter aircraft could take off or land with smaller wings, and it could land and take off on impassable runways because of these features. It would be popular at airports that are situated in towns: Shorter take-off paths mean less noise.

However, it would also be possible to use the weight reduction for carrying additional freight on every flight. The generation of environmentally-friendly aircraft already exists on the drawing board. Yet experts do not expect a series production before the year 2010.

It has already been given a nickname: Technicians and engineers call it affectionately Cryoplane because of the cryogenic fuels—such as hydrogen or natural gas—used.

Ministry Denies Reports on Pesticide Poisoning in Albanian Village

LD0908162594 Berlin DDP/ADN in German
1430 GMT 9 Aug 94

[Excerpts] Bonn (DDP/ADN)—The Federal Environment Ministry today rejected a report by the "Stern-TV" program claiming that there were indications of insidious poisoning in the Albanian village of Milot by the German pesticides stored there. A spokesman for the Environment Ministry in Bonn said that the Albanian Health Ministry had denied such reports, which had already appeared previously in an Albanian party newspaper, to the German Government. [passage omitted]

The Ministry spokesman pointed out that, according to the Albanian authorities, no signs of illness or malformations attributable to pesticides had been identified in the 100 newborn infants in the village. [passage omitted]

Test Designed To Assess Ozone Risk to Health

94WN0360A Duesseldorf VDI NACHRICHTEN
in German No 27, 8 Jul 94 p 3

[Article by Christa Friedl: "Much Ado About Ozone: Heilbronn Experiment Lowered Noise and Exhaust Gas Pollution"]

[Text] [First paragraph is editor's summary] Duesseldorf, 8 July (VDI-N)—Are limitations on traffic and production protecting us from health-threatening ozone? The ozone experiment in Heilbronn/Neckarsulm last week was supposed to help answer this question. Long before the scientific evaluation of innumerable data is available, one thing is clear: an effective campaign against ozone requires strict regulations which apply to the whole country.

Bright sunlight from a deep blue sky, a stable high pressure system and all this for six days in a row—who in Germany doesn't wish for that? But there was nowhere where summer was more eagerly awaited than in Baden-Wuerttemberg: when the last two weeks in June showed their good side, the long-planned ozone experiment in the Swabian lowland in the region around Heilbronn/Neckarsulm could finally put its show on the road. From 23 June to 26 June there was a ban on automobiles without working catalytic converters in the city centers, as well as on trucks without Euronorm A and B. No driving over 60 kph was permitted; the region's businesses were required to put a throttle on production.

When there is strong UV radiation, ozone is formed from so-called preliminary substances, primarily hydrocarbons and nitrogen oxides, by oxidation of the oxygen in the air. That is why automobile traffic is always the first suspect: experts ascribe approximately two-thirds of nitrogen oxide emissions and half of hydrocarbon emissions to it.

The irritant gas leads to circulatory complaints, visual distortions and even lung complaints for an estimated 10 percent of the population. But in spite of heated public discussion and numerous investigations there is still a lack

of "well-based evidence for the potential risks and particularly for the effects of emission control measures," is how Gunther Motz from the Prognos Institute in Basel assesses the situation.

This last is what Baden-Wuerttemberg's minister of the environment, Harald Schaefer, wants to change. Schaefer explained the goal this way before the beginning of the experiment: "It is to yield information about whether drastic limitations on industry and traffic could help to combat the summer ozone highs through temporary local measures." Thus the basic idea is that if traffic is limited the level of preliminary substances will go down and low-level ozone formation will be slowed.

But it won't be that easy. Ozone calculation is an equation with three unknowns: first, the irritating gas is formed after a delay, so that preliminary substances from other areas of accumulation influence the ozone values in the experimental area. Second, nitrogen oxides contribute not only to the formation but also to the breakdown of previously formed ozone. And not least, the irritant gas itself is carried in and out so that locally formed ozone is mixed with ozone from elsewhere.

"The results of our experiment must stand up to a scientific debate," says Dr. Wilfried Weiss, project director of the ozone experiment in the Baden-Wuerttemberg department of the environment. And the expense was enormous. Seventeen measurement vehicles, two stationary measurement points and two tethered balloons were used to measure the air pollutants, including ozone, nitrogen oxides and hydrocarbons. Radio probes from the German Weather Service registered wind speed, temperature and humidity up to a height of 8 km. The MetAir company from Illnau in Switzerland also launched one of their test airplanes. The engineering office of Heusch-Boesefeldt in Aachen was assigned traffic counts at a total of 32 intersections. Measurements were taken on six days in all, and traffic was recounted last Tuesday and Friday. Costs: DM2.4 billion.

A similar number of institutes are participating in data evaluation. The State Office of Industry Supervision in Heilbronn is investigating how many fewer pollutants business and industry emitted during the period of the experiment. The universities of Stuttgart and Berne are calculating how ozone changed with respect to height. The Dutch institute TNO in Delft is to find out the background level. The results from the universities of Karlsruhe and Thessaloniki are being awaited with particular eagerness: here scientists are setting up "meteorologically corrected" ozone model calculations which are to give information about how similar measures in other areas of concentration could lower the ozone damage.

"But that will take time," says Weiss. Everyone will have to wait at least two months for statements about ozone levels in the experimental area. The complete evaluation is expected to take four to six months.

But it is already clear today that levels caused by nitrogen oxides and benzene fell drastically both on major traffic

routes and on the Autobahn. Benzene fell from an average of 2.8 micrograms/meter³ to 1.6 micrograms/meter³, nitrogen oxides by an average of 40 percent. But the most impressive was the reduction in noise. As Weiss says: "Many people will be able to sleep with their windows open for the first time in many years."

From Stuttgart the information about the reduced ozone values should get to Bonn. "Ultimately we want to spur on development of an effective ozone ordinance," says Weiss—an ordinance which makes traffic limitations possible in large areas and not only for individual streets in city centers, as provided in the "ozone ordinance" which died last summer in the Federal Council. An initiative from the Federal Council is to press for a change in paragraph 40, section 1, of the Federal Emission Protection Act this fall. This paragraph is the legal basis for the restrictive winter smog ordinance. Weiss says, "If the passage on the 'low-exchange weather system' were struck out, we could make it into a summer smog ordinance with equally drastic traffic limitations."

And that is not all: "An effective summer smog ordinance would also have to encompass production limitations," emissions expert Dr. Claus Rink of the Society for Scientific Risk Research in Kerpen confirms. The automotive industry, the chemical industry, varnishing plants and gas stations contribute to the level of hydrocarbons. In addition, power plants supply about a quarter of nitrogen oxides.

Not only in Baden-Wuerttemberg is there much ado about ozone. The Federal Department of the Environment (UBA) is also sponsoring a research project by the Prognos Institute in Basel and the Wuppertal Institute for Climate, Environment and Energy to investigate which measures lead to which reductions in ozone regionally, countrywide and throughout Europe. The UBA does not expect results until next year, but the scientists at Prognos have already concluded that small-scale city-center closings achieve a maximum of five percent reduction in precursor substances. And a speed limit of 80 km/h on Autobahns would hardly reduce the volatile hydrocarbons.

What if the small-scale ozone experiment in the little Land achieved no reduction at all or only slight reductions in ozone? Weiss says, "Then at least we have demonstrated scientifically that we need large-scale traffic limitations." That comes as no surprise to many people on the street. "Of course it shows that ozone comes from cars and that driving bans would be sensible," comments Gerd H. of Heilbronn, "but no politician will dare to put such driving bans into effect, particularly in an election year."

Airbus To Be Used To Measure Ozone Over North Atlantic

94WN0360B Duesseldorf VDI NACHRICHTEN
in German No 27, 8 Jul 94 p 16

[Article by Ursula Schiele-Trauth: "Airbus on the Track of Ozone"]

[Text] [First paragraph is editor's summary] Duesseldorf, 8 July 94 (VDI-N)—In a worldwide program, passenger planes are to measure ozone and water vapor as they travel. This should reveal the extent to which air traffic pollutes the environment. It is hoped that the project will give a better understanding of the greenhouse effect and of the processes which are leading to a steady increase of ozone in layers near to the ground.

On 9 June Lufthansa acquired their hundredth Airbus. What makes this machine different is that it is equipped with a measuring system to measure the concentration of ozone and water vapor in the atmosphere on their flights under the aegis of the German-French research program MOZAIC (Measurement of Ozone on Airbus In-Service Aircraft). "We have to know what effects air traffic is having on the atmosphere and ultimately on the climate," said Dr. Klaus Nittinger, technical director of Deutsche Lufthansa AG, when taking delivery of the A-340 plane in Frankfurt.

Airplanes are suspected of raising the moisture content of the atmosphere with the water vapors from their propulsion exhaust gases, thus contributing to the greenhouse effect. Another concern focusses particularly on nitrogen oxides in the exhaust gases. They could produce additional ozone at this altitude, analogous to summer smog at ground level.

According to measurements made by the observatory of the German Weather Service at Hohenpeissenberg, ozone is generally increasing between ground level and the lowest 12 km, i.e. in the troposphere, at all altitudes. "Since 1967, when we began to make observations, the increase has been about 60 percent," says Prof. Dieter Kley, director of the Institute for Polluted Atmosphere Chemistry in the research center at Juelich. Since ozone interferes with human metabolism at unspecified oxidation levels, as well as with the rest of the biosphere, "we are headed for serious problems if the increase goes on unchecked," says Kley. Ozone also passes from the stratosphere to the troposphere, which is lower, by a natural exchange process.

Information about global distribution of the trace gases of water vapor, ozone and nitrogen oxides in the upper troposphere and about seasonal variations in their concentrations has remained incomplete up till now. Such information is a prerequisite for researchers in order to understand better the observed changes in the ozone level and the consequences of the natural greenhouse effect. Satellites cannot provide these data, because they cannot "look inside" the troposphere at present, as Kley put it. Until now the researchers have sent up balloons with sensors to get a picture of the conditions. But these could only be "snapshots," because they only provided information about a small segment of space and time. In the MOZAIC project, it is hoped to close this gap for ozone and water vapor by using long-distance planes on their transcontinental flights. It is true that there are no direct measuring devices available for nitrogen oxide at the moment which could be accommodated in normal passenger airplanes, so that the experiment must be limited to the resultant ozone.

Effects which are caused by air traffic should be recognizable particularly on the North Atlantic route along the main flight corridors. "In flights to the south and over the equator we will probably find only the natural background concentration of ozone," Kley predicts.

A total of five A-340 Airbuses are being used in this enterprise, two from Lufthansa and one each from Air France, Sabena, and Austrian Airlines. Two ports for the measuring devices are affixed to the outer skin of the aircraft, near the nose. One contains a sensor for measuring humidity. From the second port the air is directed into the interior of the airplane through a system of tubing, and the ozone content is analyzed by absorption. The equipment is fully automated and carries out a measurement every four seconds from takeoff to landing. At normal travel speeds this corresponds to a distance of no more than one km between measurement points. During takeoff and landing indications of the height distribution of the gases can also be obtained. The results are electronically stored, along with information about the date, time, direction and wind speed, temperature, pressure, flight altitude and position.

Once a month the data carriers on board are exchanged. Every year the five 340 Airbuses will supply about 240 million data entries. They are to be made available to all European scientists. But the University of Toulouse wants to calculate mean values for every minute of flight time so that researchers will not be smothered in a flood of numbers. In Germany, besides the research center at Juelich, the Max Planck Institute for Chemistry in Mainz is also participating in the evaluation. The project is to run initially until mid-1996. Half of the cost, estimated at 200 million ECU, is being borne by the European Union. The other half is being assumed by the Airbus industry and the participating research institutes.

Substances Derived From Crabs, Shellfish Tested for Use in Water Purification

94WN0360C Duesseldorf VDI NACHRICHTEN
in German No 27, 8 Jul 94 p 16

[Article by Bettina Reckter: "Chitosan Cleans Waste Water: Modified Chitin From Crab Shells Fishes for Heavy Metals"]

[Text] [First paragraph is editor's summary] Duesseldorf, 8 July 94 (VDI-N)—In waste water purification, heavy metals present particular problems, since they are not biodegradable. Nevertheless it must be guaranteed that no more heavy metals than allowed by law are released from industry and business into the rivers. A procedure from Oldenburg University could provide protective help; it involves functional metal-catchers being tailor-made out of the residues of crab fisheries.

The substance which is to achieve this is called chitin—a carbohydrate, more precisely a polysaccharide, which is responsible for the fact that insect armor and crab shells are so hard and that the airy caps of mushrooms are stable. In its chemical structure, chitin resembles cellulose and

can be worked into fibers, films, membranes and colloids in the same way. But if chitin is heated together with caustic soda solution in the absence of hydrogen for several hours, chitosan is obtained, a substance which can be used in even more ways, as a study commissioned by the Department of Nature, Environment and Land Development of Schleswig-Holstein shows.

Although the amounts of chitin available mainly from crab fishery wastes amount to about 200-400 tons annually, there is still no chitin or chitosan manufacture in this country worthy of the name. It is different in Japan and the U.S.A.: of the more than 2,000 tons of chitin produced worldwide, Japan alone takes up 1,270 tons for its own needs.

Now scientists from Oldenburg University wanted to examine the use of chitosan for the treatment of drinking water, and they received support for the project from the Federal Department of Research and Technology. Chitosan does bind metals, but in a rather random way—irrespective of their chemical properties or toxicity. That is why the Oldenburg researchers were looking for a possibility of tailoring chitosan in the laboratory for very definite heavy metals.

This turned out to be relatively simply, because the long-drawn-out molecule chain exhibits "design locations," as it were, for such a transformation—certain functional groups onto which the team around Siegfried Pohl, professor for inorganic chemistry at Oldenburg University, "graft" special "tentacles," each with a preference for one particular heavy metal. As previous experiments have shown, such an altered chitosan molecule can bind only one metal atom, and it follows that a larger amount of the substance is necessary to purify polluted water completely.

So in Oldenburg they constructed columns which are filled with chitosan in the form of balls—i.e. with maximal surface area—and water polluted with heavy metals flows by them. The balls can then be regenerated with concentrated acid. Although chitosan, as a biological product, possesses a certain leeway regarding its chemical properties, Pohl still hopes that they "will have developed a material within a few months which can then be tested on a larger scale." A new project is already being planned: another generation of chitosan is to fish chlorinated hydrocarbons out of the water.

LUXEMBOURG

Minister Announces Measures To Reduce Air Pollution

BR1208150294 Luxembourg LUXEMBURGER WORT
in German 6,7 Aug 94 p 5

[Article signed MaG: "Minister Lahure Announces Concrete Measures Against Air Pollution"]

[Text] Medium- and long-term measures to control air pollution were announced yesterday morning by Health

and Environment Minister Johny Lahure at a press conference called specifically to address the ozone problem, currently of great concern in Luxembourg. Short-term measures, such as a speed limit or even a ban on using automobiles not equipped with a catalyzer, will however only be introduced by the minister if it is proved that they will cut the incidence of ozone.

By the year 2,000, Lahure plans to reduce nitrogen and hydrocarbon emissions by 26 and 20 percent respectively. A number of concrete measures will be taken to achieve such reductions, according to the minister.

Catalyzers for Used Cars

Pollution produced by traffic will be the main target for reduction by catalyzers. Lahure intends to cooperate with representatives of Luxembourg's automobile trade to devise the details of regulations requiring all used cars sold by dealers (representing 30,000 out of a total 550,000 automobiles sold in 1993) to be equipped with catalyzers. He also intends to support the "Eurobenzin" project initiated by German Environment Minister Klaus Toepfer, intended to introduce a low-benzene European fuel.

New Measures in Industry

Lahure intends air pollution by industry to be limited by such measures as opening electro-steel plants; shutting down an iron foundry; installing catalyzers in glass manufacturing plants; using various methods of recovering benzene fumes emitted at gas stations; extending distribution of natural gas; using closed systems in dry cleaning; various improvements in waste incineration processes; and reducing solvent use in the rubber industry.

Before the measures announced by Lahure, which he stated would need to be seen in a regional and European context, are actually introduced, the results of various studies by foreign expert consultancies will be analyzed by the Environment Ministry.

Regarding high ozone levels, Lahure stuck yesterday to his previous well-known attitude, stating he would not risk taking premature measures which would not lead to the desired results. He added that the latest pilot project in Heilbronn, Germany, had proved that excessive ozone levels could not be directly reduced by introducing speed limits or bans on automobile use. Short-term measures should only be expected when they were clearly appropriate, he stated, pointing out the differing interpretations of ozone limits.

Finally, Lahure stated that, to tackle ozone pollution once and for all, air pollution as a whole would need to be halved: This remained his primary goal.

NORWAY

Country Breaching North Sea Environmental Agreement

BR2208105494 Oslo AFTENPOSTEN in Norwegian
18 Aug 94 p 4

[Article by Sveinung Berg Bentzrod: "Violating Half The North Sea Agreement"]

[Text] Norway is breaking the North Sea Agreement on a number of points and it looks as if less than half of the 1995 goals stipulated in the agreement will be achieved.

On behalf of the Norwegian environmental protection authorities, the State Pollution Inspectorate SFT [Statens forurensningstilsyn] has prioritized 10 pollutants, emissions of which should be reduced in accordance with the North Sea Agreement. The Nature Conservation Association's magazine NATUR & MILJO BULLETIN has now documented how the stated goals will only be achieved for four out of the 10 substances. SFT is currently going through all the objectives laid down in the agreement in order to ascertain what can be done to alter the gloomy picture.

Last month, AFTENPOSTEN reported that SFT is apportioning much of the blame for Norway's failure to meet its obligations regarding emissions of nitrogen to the agricultural sector. On the subject of the 10 pollutants, NATUR & MILJO BULLETIN claims that by the end of 1995, emissions of cadmium, copper, zinc, nickel, stannous organic substances, and fluorine will exceed the targets set by the North Sea Agreement. The targets for arsenic, chrome, and PAH (tars) will, it maintains, be met, but it is uncertain whether the same will apply to mercury.

Separate requirements have been imposed on each pollutant regarding emissions into the air and water, as have respective national and international goals. In favor of the environmental protection authority, it is stated that because of fluorine that none of the four partial goals will be achieved.

According to departmental inspector Ingrid Bjotveit of the SFT, one major problem is that there are not enough substitutes for these 10 substances. For instance, there is no recognized replacement for the use of copper as a material for the bottom of boats. Bjotveit believes that initiatives focusing on various products will become increasingly more important if the goals laid down in the North Sea Agreement are to be reached.

Fear of Poison in The North Sea

Several Norwegian and international reports published over the last year have found that pollutants are accumulating in the sediments on the bed of the North Sea and in deep-sea fish. In particular, the quantities of emissions detected in the so-called Norskerenna have emerged as worrying. Looking at things on a broader scale, Norway is no major sinner. However, in the past the Norwegian authorities have liked presenting themselves as trailblazers on the environmental scene, so it sticks out when the stated objectives of international agreements are not being achieved.

Prime Minister Assesses Nuclear Threat

BR2308114294 Oslo AFTENPOSTEN in Norwegian
20 Aug 94 p 9

[Article by Norwegian Prime Minister Gro Harlem Brundtland: "Europe And The Nuclear Danger in The North"]

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[Text] Military forces on Kola are no longer viewed as a threat, but when the Iron Curtain came down, we became seriously aware of the environmental threats that heavy industries on Kola represent. In addition, nuclear power stations and discarded nuclear reactors from the Russian fleet are giving cause for concern, believes Norwegian Prime Minister Gro Harlem Brundtland, who in this article advocates broad international cooperation aimed at solving the existing problems.

The northernmost part of our country and the entire Barents region is rich in natural resources and possibilities. Since World War II the region has been artificially divided by the border between Norway and Russia. Now we in the north are also noticing the major changes in Europe. Today we no longer view the military forces on Kola as a threat. Perhaps the most visible expression of the new cooperation between former opponents came about through the naval exercise dubbed "Pomor," in which the Russians practiced communications, rescue, and peace-keeping operations together with forces from Norway and our Allies.

When the Iron Curtain came down, we also got to see a worrying picture. We were well aware of the environmental threats posed by sulfurous emissions from the nickel plant, but the situation within the civil and military nuclear sector is alarming.

Here in our neighborhood there are 100 operational nuclear submarines and 60 scrapped ones. Forty of the discarded submarines still have a nuclear reactor and used nuclear fuel on board. The maintenance of the submarines is poor and the Russians' resources are scant. What is needed is a new, reinforced effort to ensure that the situation is secure and that dismantling and storage is done safely. In addition to the direct threat of nuclear pollution, which can also affect us, it is important to prevent any nuclear fuel from going astray. Recently, attempts to smuggle nuclear fuel—materials that could be used in the manufacture of nuclear weapons if they fell into the wrong hands—from Russia into Europe have been uncovered.

The nuclear power station on Kola is also a source of unease. Like nuclear power stations of the "Chernobyl type," nuclear power stations of the "Kola type" are neither built nor permitted in Western countries. The likelihood of accidents there is much greater than that in our power stations. In the case of the Kola power station there is also good cause to ask whether the Russians are capable of storing and reprocessing used radioactive material.

The responsibility for clearing up this problems lies in the first instance with the Russians themselves. However, in the light of the major problems currently being experienced by Russia, with its meager resources, currently obscure distribution of responsibility, and unclear mode of organization, we cannot sit idly by and wait for the Russians to manage to deal with the situation alone.

Norway has taken some immediate measures to improve safety at the nuclear power station. Of course, the ideal

course of action would be to close it down altogether. That is what we would most like to happen. However, it is not Norway that decides what happens. All we can do is suggest to the Russians that they give priority to dealing with the nuclear threats in our vicinity. The last time I took up this matter personally with President Yeltsin was at the EU Council meeting at the end of June, he being there to sign the extremely comprehensive cooperation agreement between Russia and the EU. This is an agreement to which Norway was not a signatory, a fact I pointed out was unfortunate for Norway as a neighbor of Russia.

Sadly, our resources alone are not sufficient to enable us to give the Russians the support they need. We lack both the economic clout and the necessary expertise to solve the problems together with the Russians. In this context, there is clearly a need for broad international cooperation.

In addition to the nuclear threat both on land and at sea, there is also the problem regarding the radioactive material that has been dumped in the Barents Sea and the Kara Sea. Measurements show that the radioactivity in the Barents Sea is low. Nonetheless, it is a source of concern that dumping has actually taken place in waters close to our shores.

Among the measures that have been set in motion at international level is the establishment of a fund by the seven leading industrial nations—the United States, Germany, Japan, France, Great Britain, Italy, and Canada (G7)—together with the European Commission. This fund is to be used to finance measures aimed at increasing nuclear safety in the former Soviet Union and Eastern Europe. Norway is contributing to this fund, together with a whole series of other countries. When I met with President Clinton on 17 May this year I raised the subject of the need for a corresponding fund for nuclear waste. Ever since, we have been working together closely with the U.S. authorities, which have shown great interest in our problems.

The problems are ones we share with Europe, the United States, and other countries. They constitute environmental threats to which we, as a neighboring country, are most exposed, but which also affect others. The same applies to the threat of proliferation of material that can be used in the manufacture of nuclear weapons. Our common interest in preventing this, together with Europe and the United States, should be self-evident.

In order to gain an overview of the problems so that we can prioritize the most important questions, vital mapping work has been done. The Norwegian authorities have been deeply involved in this. However, I would also like to emphasize the praiseworthy work carried out by the Bellona Environmental Foundation. Bellona has conducted 50 studies in Russia, especially in the Murmansk and Arkhangelsk regions. That work has now been channeled into a comprehensive report which is available in Norwegian, English, and Russian.

The Russian authorities have described Bellona's work in glowing terms. The report has also been submitted to the

European Commission in Brussels. It underlines the importance of setting new measures in motion in order to protect ourselves against the dangers lurking in our immediate vicinity. The EU countries decided in June to set up a wide-ranging aid program aimed at safeguarding the reactors in Chernobyl. There are plans to close down some reactors and improve others. Bearing in mind its current member states, it is hardly surprising that the EU is giving priority to that aspect of nuclear safety which particularly affects them.

The possibility of getting the EU to commit itself to using its full economic weight and competence to deal with the problems in our immediate proximity will increase if Norway, Sweden, and Finland also join. If this happens, the three Scandinavian countries which are geographically closest to Kola will have equal weight in the EU as, say, Germany. We will then do our best to ensure that the problems affecting us most of all become the problems of the EU as a whole.

With Norway, Sweden, and Finland as member states, the EU will be able to take responsibility for the issues that are most on our minds in a manner quite different than the way in which we have so far managed to do so outside the Union.

I have noticed that the opponents of Norwegian EU membership are planning to promote their "No" vote using the slogan "Environment or Union." My fear is that they are seriously underestimating the environmental problems we face if they believe that a lone Norway will be better able to solve its problems than a Norway anchored within the EU. It is a serious responsibility for our future basis for life that the "No" movement is taking upon itself here.

UNITED KINGDOM

Nuclear Power Industry Argues Its Case

MS2408125794 London *FINANCIAL TIMES*
in English 24 Aug 94 p 6

[Article by David Lascelles: "Nuclear Tries to Clean Up its Contaminated Image"]

[Text] The environment is a central plank in the nuclear industry's case for building more power stations, even though many people associate nuclear stations with radioactive contamination.

Nuclear Electric, the state-owned utility which supplies a quarter of the electricity in England and Wales, says in its submission to the government's nuclear review: "Nuclear power is an essential part of policy to achieve the government's current environmental commitments and its long-term sustainable development objectives."

The utility's first argument is that nuclear stations emit virtually no pollutants. Unlike fossil fuel generators they produce no sulphur dioxide and nitrous oxides, the main

causes of acid rain, nor do they emit carbon dioxide, the "greenhouse gas" which is thought to cause global warming.

By Nuclear Electric's calculations existing nuclear power stations save emissions of 840,000 tonnes of sulphur and 17m tonnes of carbon a year.

The UK is committed to bringing carbon dioxide emissions back to 1990 levels by the year 2000, and lower targets are likely after that. The company says that more nuclear power is essential if these targets are to be met.

Its second point is that nuclear power is much cheaper than it looks because of its relatively small environmental impact. The submission cites findings by the Centre for Social and Economic Research on the Global Environment which measures the cost of environmental damage from fossil-fuel power generation. These suggest that the nuclear industry saves more than 300m pounds a year compared with coal-fired plants.

State-owned Scottish Nuclear estimates that its operations will save Scotland 450m pounds in environmental costs between 1995 and 2010. The third point is that nuclear power is the only significant fuel source which pays its full environmental cost. Coal and other fossil fuels damage the environment but do not foot the bill. The main environmental cost is disposing of nuclear waste and decommissioning old plants. Nuclear Electric says that this is included in the price of nuclear-generated electricity.

Scottish Nuclear says its stations "make full provision for these expected future costs. The costs are therefore internalised in the cost of nuclear generation".

Much of the debate surrounds the claim that the government will be unable to meet its targets for pollution levels—particularly for carbon dioxide—without nuclear power. The only forecasts the government has made appeared in the Department of Trade and Industry's Energy Paper 59, published two years ago.

Of the six possible scenarios in the paper, only one—which assumed low economic growth and high energy prices—showed lower carbon dioxide levels in 2000 than in 1990. All forecast sharp rises up to 2020. One reason was that the paper assumed nuclear power would decline as ageing stations were shut down and not replaced.

But the fossil-fuel power generators, such as National Power and PowerGen, are more optimistic that the targets can be met. They point to the cleaning equipment being fitted to two of the largest coal-fired stations and the tough new targets being introduced by the pollution inspectorate. One fossil-fuel official said: "We think we can get there with room to spare."

Greenpeace, the environmental group, has submitted a detailed rebuttal of the nuclear industry's claims. It accepts that nuclear emissions are low, but says this advantage is greatly outweighed by other problems, particularly radioactive waste.

Greenpeace says it would be more sensible to reduce emissions through greater energy efficiency, renewable energy, and better use of fossil fuels.

Nuclear Electric has anticipated these objections. Its submission says that even if all these alternatives were exploited to the maximum, they would still not yield as big a result as building more nuclear power stations.

One of the problems for the nuclear industry is that its estimates of the cost of environmental damage by fossil fuels are only that—estimates. For the industry to deliver its benefits in cash terms the government would have to introduce measures to make fossil fuels pay their full environmental costs.

Scottish Nuclear suggests a tax on fossil fuels, legislation which places a premium on nuclear electricity, and a system of pollution permits which could be traded among power generators.

A group of leading energy academics headed by Professor Ian Fells of the University of Newcastle upon Tyne suggested to the government that an "energy policy framework" be created to overcome the short-termism of the markets and bring out nuclear's long-term environmental advantages.

The academics said: "Nuclear power has an important role to play in environmental protection, security of supply and ultimately to compensate for exhaustion of fossil fuels. It would not be prudent to leave its fate to market forces."

Inter-State Ecological Council Signs Agreement With UN in Minsk

LD1508125994 Moscow ITAR-TASS in English
1212 GMT 15 Aug 94

[Article by ITAR-TASS correspondent Aleksandr Lyushkevich]

[Text] Minsk August 15 TASS—An environmental cooperation agreement was signed on Monday in Minsk between the Inter-State Ecological Council (ISEC) and the U.N. environmental programme. This accord was reached within the framework of the international seminar on "Montreal Protocol on Ozone Layer-Destroying Agents: Compliance in the CIS and Baltic States."

The agreement is needed because the new independent states lack experience in environmental protection under market conditions, while the world's financial and technological resources are inadequate for handling regional and global ecological problems.

According to seminar participants, this agreement will help coordinate international efforts in environmental protection and prevention of further damage in ISEC regions.

The agreement's focus is on vulnerable ecological systems, such as the Aral and Caspian Seas, the Volga delta, the Black Sea with the Danube delta, the Caucasus region and the taiga.

Japanese, Russian Researchers Discuss Siberian Forests

OW1808144694 Tokyo KYODO in English 1427 GMT
18 Aug 94

[Text] Niigata, Japan, Aug. 18 KYODO—About 300 Japanese and Russian researchers met Thursday [18 August] in Niigata along the Sea of Japan to discuss how to protect the environment in the Siberian forests.

Russian participants reported that about 400,000 square kilometers of Siberian forest have been lost since the 1930s due to logging and fires.

Japanese speakers said global warming may cause dissolution of the Siberian permanent frozen soil and disrupt the environment.

If the soil disintegrates, tens of billions of tons of methane gas may be released into the atmosphere, further promoting global warming, they said.

The forum was sponsored by a group of Japanese and Russian researchers headed by Shogo Kobayashi, a professor at Niigata University.

No Immediate Solution for Ending Black Sea Pollution Envisaged

94WN0364A Moscow ROSSIYSKAYA GAZETA
in Russian 2 Aug 94 p 2

[ITAR-TASS article: "Will the Black Sea Become a Dead Sea?"]

[Text] The Black Sea, which has found itself at the center of political, economic and military cataclysms of current times, has become the most polluted sea in the world, and is dying an agonizing death. Known from the times of Ovidius and Herodotus for its fierce storms and abundance of fish, in the last 30 years the sea has been turned into a sewer for half of Europe—a place for dumping huge amounts of phosphorus and mercury compounds, DDT, petroleum and other harmful waste produced by 160 million people living along its shores.

Obviously, this is not happening without consequences. For the present day, out of 26 varieties of fish which were caught by fishermen here in the 60's, only five remain. The commercial catch of mackerel, which at one time was the basis for the fishing industry, was performed for the last time in 1965. A brigade leader of a fishing collective kolkhoz [collective farm] near Odessa, Nikolay Prodayvod, recalls that before his brigade would catch 20 tonnes of fish a day. Today a catch of 300 kilograms is considered a great success. Yet the productivity of each hectare of the Black Sea exceeded by five times the similar indicator of its neighbor—the Mediterranean Sea.

The one-million population of Black Sea dolphins has dwindled to 200,000 in 30 years. Moreover, many of them are infected with hog cholera, which was transmitted to them as a result of dumping into the water the waste from large hog raising farms on the Danube delta. The local variety of seals has disappeared. Oysters and mussels, which were called the "kidneys of the sea" because they filtered the water, are also disappearing. Thick growth of beneficial algae, which before took up more than 10,000 square kilometers on the northwestern shelf, are today preserved only on one-tenth of this territory.

Beginning in the 70's, outbreaks of cholera have become a common occurrence in the countries adjoining the sea, because the purification structures are practically absent there, and the beaches throughout the entire region are closed down regularly due to foul-smelling pollution.

Turkey has always given preference to economic programs over ecological ones, but now it must review its position. Istanbul, with a population of nine million, dumps impurities and waste into the Marble Sea. As a result, this water reservoir, which at one time served as a spawning ground for fish from the Black Sea, is turning into a foul-smelling swamp whose surface is covered with excrement and oil slicks.

The oxygen-deficient zone formed in 1973, which was slightly larger than 3,500 square kilometers, has today expanded to almost 50,000, which comprises almost 10 percent of the entire water basin of the Black Sea. According to the evaluations of certain scientists, the total loss of fish has comprised five million tonnes. For the present time, the fish which survive are the ones which stay close to the surface, such varieties as anchovies and sprat. However, even they are falling victim to other destructive factors. The Black Sea is on the brink of extinction.

At the end of last year, the Program for Regulation of the Ecology of the Black Sea undertook practical activity.

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Despite the support of the UN and the World Bank, in three years it has been allocated only \$25 million for coordinating research and defining immediate measures for purification.

This year, Ukraine was the last of the six Black Sea countries to approve the International Convention on Protection of the Black Sea Against Pollution. Recently these countries—Georgia, Russia, Ukraine, Bulgaria, Rumania and Turkey—began negotiations on developing a second convention which, specifically, must establish

fishing quotas. However, the economic and political chaos in Russia, Ukraine and Georgia, as well as in Bulgaria and Rumania, does not facilitate the implementation of measures to protect the sea against pollution, which require sums numbering in the billions. Thus, despite the agreement of all these countries to compile evaluations of the effect of realization of major projects on the surrounding environment, the construction of a new oil terminal not far from Odessa began in February, without any preliminary ecological study.

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